Volunteer Firemen

AUGUST 1945

NATIONAL FIRE PROTECTION ASSOCIATION
INTERNATIONAL
60 Batterymarch Street Boston 10, Massachusetts

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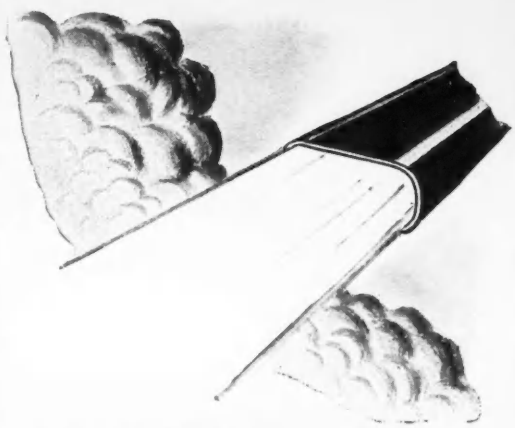

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4. Recoil outlet is of improved design.

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8. Streamlined design improves appearance.

9. Seal wire is fully visible for quick inspection.

10. Valve design is simple, fool-proof. The natural way's the right way to operate it—even a novice can't make a mistake!

10-, 15- and 20-pound extinguishers equipped with this new valve will be ready for delivery October 1. Place your order now.

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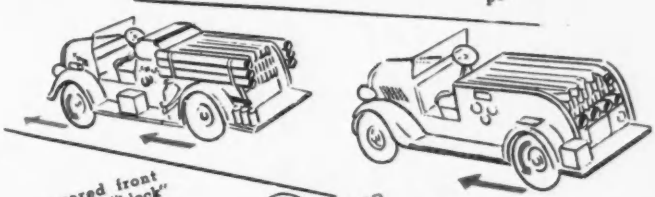

Non-powered front wheels tend to "block" progress of truck on inclines, reducing the ordinary truck's ability to climb steep hills. Improve your fire-fighting protection with FWDs.

WRITE FOR LITERATURE

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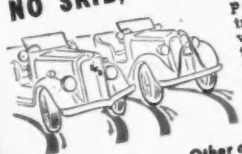
Other designs, lacking drive on front wheels, lose time in get-away.

NO SKID, NO SLIP, NO SLUE!



Powered steering traction holds front wheels to direction of turns, thus minimizing skid-danger. Skidding tests conducted on ice show 50% less skidding.

FWD... non-skid.

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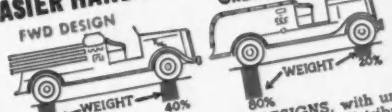

FWD DESIGN balances weight on all four wheels . . . assures easy handling at any speed.

OTHER DESIGNS, with unbalanced weight distribution are difficult to handle at high speeds.

QUICK, POSITIVE, SAFE EMERGENCY STOPS

FWDs have two separate and independent 4-wheel braking systems, with brake drums on each wheel. Combined with properly balanced weight distribution, these provide the most effective braking possible.

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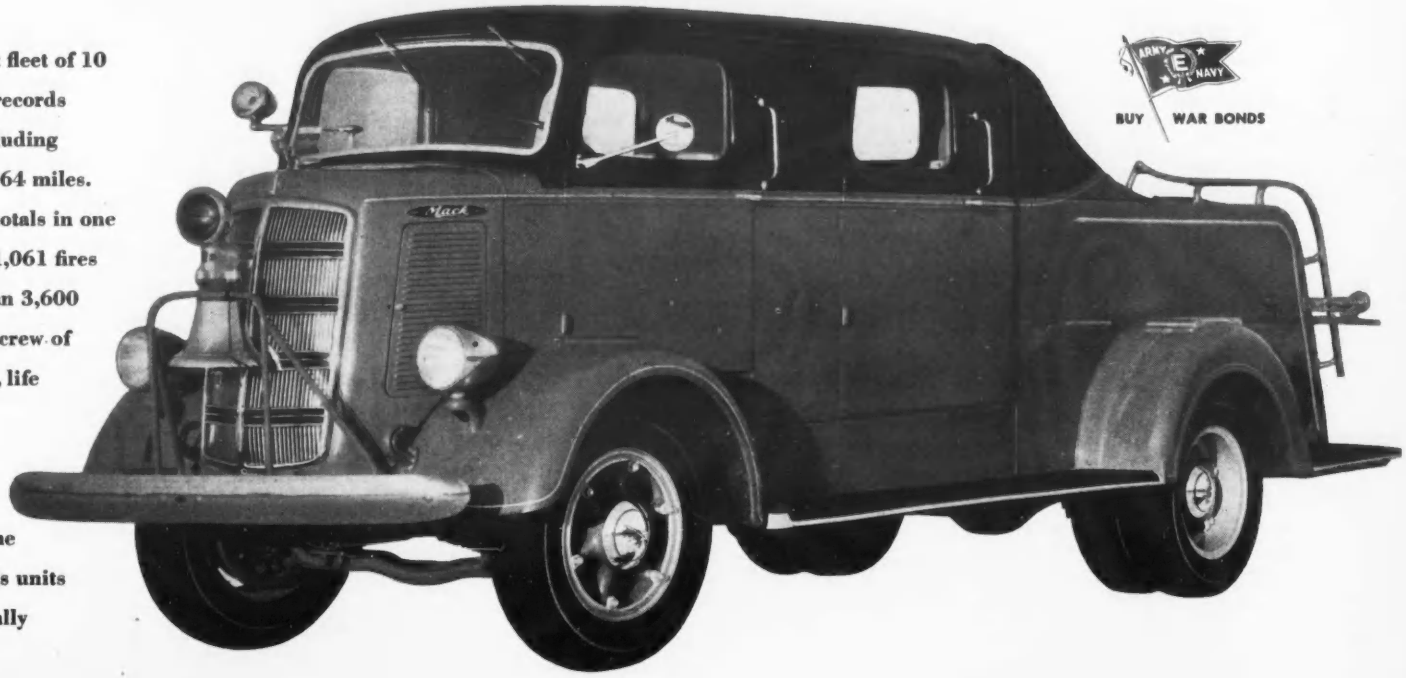
FOUR-WHEEL-DRIVE *Fire Apparatus*

GETS TO FIRES FASTER and SAFER!

11,061 Fires...can you top this?

This Chicago Fire Department fleet of 10 squad wagons has set a lot of records in the past twelve months, including 17,237 runs for a total of 60,964 miles. While achieving these record totals in one year the apparatus attended 11,061 fires and worked a total of more than 3,600 hours. Each big unit carries a crew of 7 men in its cab, plus first aid, life saving and entry equipment, and a turret nozzle capable of shooting 1,000 gallons of water a minute. Such extreme service the year round demands units that have extra stamina. Naturally —*they're Macks!*



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If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.

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Volunteer Firemen

VOLUME 12 NUMBER 8

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THE VOLUNTEER FIREMAN

FIRES in frame tenements take a lot of lives and require fast work on the part of fire fighters to coordinate rescue, ventilation, and extinguishment operations. The cover picture this month shows a typical fire in a frame "three decker" having tenements on the two upper floors and mercantile occupancies on the first floor. This was a daytime fire and fortunately the only rescue operation involved was the saving of a pet dog. However, the picture makes very clear the smoky nature of such a blaze even when it starts on the top floor as was the case in the fire illustrated.

This blaze occurred recently in Lynn, Massachusetts. The photograph was snapped by *Lynn Item* photographer. Richard Smith, who was on the scene before firemen had water on the fire. Note how promptly the laddermen are going over aerial ladders to the roof to ventilate, while hosemen are running lines in the street.

This blaze started in a third floor kitchen, spread into the roof space, but got no farther due to speedy work of Lynn firemen responding to two alarms.

MANY volunteer fire departments do not operate at anywhere near their possible maximum of efficiency because they are not well organized. Yes, they have a chief who has been on the job for many years and who more or less runs the show, but the rest of the members have no real responsibility or interest in the operation of the department. When the siren sounds they will be there if possible and will man whatever equipment the chief directs shall be used, but there is not much incentive to really make the department click as there is when every man has a responsible job and wants to prove to the other members that he can do that job just a little better than it has ever been done before. When the department is organized along logical lines with one or more fire companies having their officers and trained men, the entire organization takes on new tone. There is company spirit and desirable rivalry between units. The various men have an esprit de corps not found in the type of volunteer fire department found in so many communities where visitors are told, not that "we have the best fire department in the county," but "so-and-so is the fire chief. He has fought all the fires here since 1915."

Now common sense will indicate that no man, no matter how experienced a fire fighter he may be, can be the entire fire department. A volunteer fire department is made up of the cooperative action of organized volunteer fire companies in which every man has a job to do. As an example, we can quote a report just received telling of the installation of new officers by the Kensington Volunteer Fire Department of Kensington, Maryland (member N.F.P.A.). Twenty-three officers, all residents of the town and all active members of the Kensington Fire Department took office for the year beginning July 1, at an installation meeting held in the firehouse on June 30. The new officers are:

President—Edward Wilks
1st Vice President—Thomas Williams
2nd Vice President—George Higgins
Secretary—Kenly S. Bell
Treasurer—R. E. L. Smith, Jr.

Chief—Newman Carmack
Assistant Chief—Leroy Taylor, Jr.
Chief Engineer and Superintendent of Machinery—Millard Johnson

Capt. Rescue Squad—L. D. Wells
Lieut. " " —William Reilly
Sgt. " " —Thomas Wilks

Capt. Engine Co. No. 1—Earle Riley
Lieut. " " " —H. Olsen
Sgt. " " " —Stanley Beltz

Capt. Engine Co. No. 2—Joseph Berry
Lieut. " " " Edward F. Mullen
Sgt. " " " —F. L. Oyster, Jr.

Capt. Engine Co. No. 3—Robert Lynch
Lieut. " " " —William Rothrock
Sgt. " " " —Leon Stevens

Capt. Engine Co. No. 4—Raymond Carter
Lieut. " " " —Floyd Bowman
Sgt. " " " —Roland Schwartzback

In addition to departmental and company officers, the department has a number of active committees such as the Refreshment Committee that served refreshments after the installation meeting, and the Publicity Committee that sent us the information about the installation.

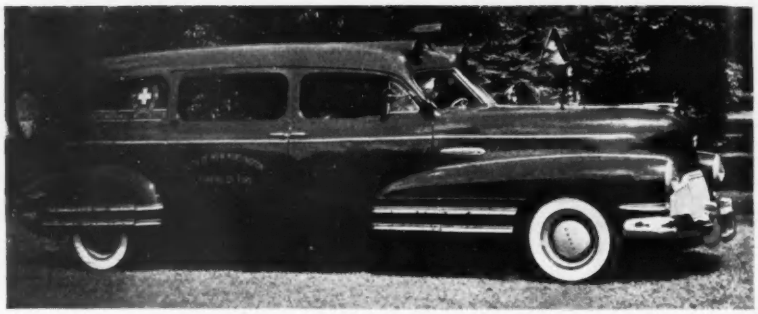
THE United States fire loss for the month of June was $34,091,000, according to the National Board of Fire Underwriters. This figure is 12 per cent more than for the same month last year.

Fire losses for the twelve months ending with June were $442,877,000, as compared with $403,773,000 for the same period, June 1944.

Canadian fire losses for June, as reported by the *Monetary Times*, were $3,582,125, as compared with $4,174,600 for June 1944.

FIRST AID AND RESCUE

Let's Get Acquainted



New Kensington, Pennsylvania. Fire Chief Edward Clawson is rightly proud of this handsome ambulance operated by the New Kensington Firemen's Ambulance Corps. In the first nine months of 1943, the boys made five hundred and seventy trips with their new vehicle of mercy. The ambulance service is supported by donations of appreciative citizens.

RETURNS from inquiries sent to member fire departments in the N. F. P. A. Volunteer Firemen's Section indicated that nearly every fire department or company maintains some kind of first aid crew, rescue squad, or ambulance service. A large group of departments include the purchase of improved first aid equipment of various kinds among their postwar expansion plans. Nearly every fireman has taken a Red Cross or an OCD first aid course. Many departments have trained groups, all members of which hold certificates of course completion.

The list of types and kinds of services rendered by fire department emergency crews is varied. Among the basic essentials are inhalators and resuscitators, ambulances and portable lighting units (seeVF, July 1945), gas masks, first aid kits, and drags for drowning accidents. On page 16 of this issue appears a story of a drag designed by a member of the Northville, New York, Fire Department, one that could be easily rigged up for any other fire company's use.

Camden, Maine. The Camden Fire Department has thirty men trained in first aid. Their ambulance, shown above, inside and out, can accommmodate five victims at one time.

More specialized apparatus, such as mine rescue equipment, is localized in certain sections of the country. In Wyoming, firemen of the Kemmerer Volunteer Fire Department have Bureau of Mines training in rescue work. The Hobbs Volunteer Fire Department, New Mexico, also sees that its fire fighters have this training as does the Mullan Volunteer Fire Department in Idaho.

Several departments on record have diving outfits as part of their first aid equipment. In New Hampshire, the Wolfeboro Fire Department has a diving outfit ready for any accident that may occur on their lake. Wolfeboro is situated on the shore of Lake Winnepesaukee, one of the largest, deepest,

Rockland, Maine. Chief Van E. Russell, of the Rockland Fire Department, wrote, "These young ladies can operate any of the equipment we have for first aid work." For information about member ladies fire department auxiliaries, read "On the Nylon Line," page 24.

and most unpredictable lakes in New England. A rare piece of safety equipment is the diving bell that is part of the Chickasha, Oklahoma, Fire Department's equipment. This department is near the Washita River.

The iron lung is becoming a much-desired and valuable addition to the standard safety equipment in the fire department. Among those reporting departments who do have an iron lung on call are the Delavan Lake Fire Department in Wisconsin, the Port Angeles Fire Department, Washington, and the East Peoria Fire Department, Illinois.

There are many miscellaneous services supplied by the first aid fire departmental sections. Several departments man first aid stations for accidents on nearby super highways. A large number of departmants have rescue boats ready for water accidents. In New Hampshire, the Franklin Fire Department has a trailer attached to their first aid truck, on which a 14-foot boat is carried. The West Paterson Fire Department, New Jersey, carries one of their metal boats on the roof of their emergency car. *(See illustration above.)*

West Paterson, New Jersey. The West Paterson Fire Department maintains a rescue squad equipped with a lighting outfit, asbestos suits and blankets, resuscitator and inhalator. The department also has three metal boats, one of which is carried on the roof of their 1932 Packard emergency car, shown above.

Gas City, Indiana. The Gas City Fire Department's panel truck is shown above. It is equipped with an inhalator and necessary first aid equipment, reported Chief Karl C. Bastian.

Several member departments submitted detailed stories of their first aid equipment. The Silver Creek Fire Department, New York, purchased a first aid emergency truck with funds from a year's salvage drive. A member of the community presented the department with two special cases of medical supplies and instruments, sufficiently complete to make an emergency operation possible.

According to the emergency roster of the Nassau County Fire Commission, the 68 volunteer fire departments of the county have 1,316 trained first aid-ers and 758 emergency squad members. There are 11 ambulances and 48 emergency squad trucks. The departments have 73 floodlighting units, 396 canister-type gas masks, 12 self-contained oxygen masks, and 12 air line masks. There are 68 inhalators in the various fire departments of the county. Only 8 of the 68 fire departments have neither an inhalator nor a resuscitator.

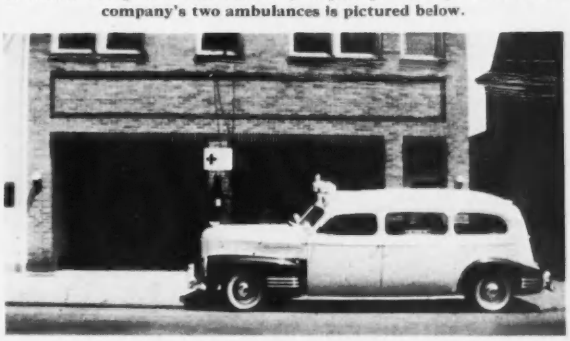
Among a total of 42 fire companies in Gloucester County, New Jersey, the Wenonah Fire Company No. 1, completely volunteer, has been judged a most progressive and outstanding unit. Chief Albert M. Weber wrote that their rescue squad truck is completely equipped with 160 items for any emergency call. Included are a portable rubber boat, grapnels, an inhalator, safety belts, asbestos suits, a self-contained oxygen mask and an auxiliary face mask, to mention a few. The unit is completely mobile.

An interesting mutual aid plan for emergency service was described by Captain William P. Babcock of Nyack, New York. The Rockland County Emergency and First Aid Council, Inc. was organized in 1938 to sponsor first aid training, and to work in conjunction

Continued on page 15

Arnold, Maryland. Chief J. Laurence Myers and Lt. H. H. Bunker, of the Arnold Volunteer Fire Department, Inc., try their first aid on Lt. Bunker's willing son. Members of the department have been trained by the Red Cross in both standard and advanced courses.

Lewistown, Pennsylvania. The Fame Fire Company No. 2 runs its own ambulance school. The firemen also operate an ambulance service to which the public subscribe at $1 a year per family. One of the company's two ambulances is pictured below.



Rural Fire Control

By Henry Giese, Professor of Agricultural Engineering, Iowa State College
Chairman N.F.P.A. Committee on Farm Fire Prevention.

Fire Engineering

AMERICA has been notoriously wasteful of her natural resources. Settling in a land of plenty more than three centuries ago, our people have not faced seriously the problem of shortage. This waste cannot go on indefinitely and we may soon come to the realization of the full significance of what these war years mean in the depletion of our natural resources. Prewar Europe, much less favorably situated than we are with reference to natural resources, has demonstrated effectively what can be done toward reducing the waste chargeable against uncontrolled fire.

Our national fire losses have increased at an alarming rate. Every year since 1937, the loss has been greater than the year preceding. In my own state, urban losses have been on the increase since 1941. This must cause grave concern in the minds of all fire-conscious people.

There are some bright spots, however, which tend to emphasize the very important fact that something can be done if people really get concerned over a problem. You will pardon my using rural Iowa as an example. I will use it, however, because I am familiar with what has gone on there. This does not imply that equally effective work has not been done elsewhere.

Decreasing rather consistently from the early thirties, the number of fires in rural Iowa in 1944 was less than 30 per cent of that in 1930. This change has not been accidental and there are factors which would tend toward an increase in fires in rural areas in some measure at least, comparable to those which have resulted in a large increase in fire waste in the city.

It is this situation that I would like to use as a background in this discussion of fire control. More than half of the farm buildings in Iowa have been checked for fire hazards by professional inspectors. Many more have been self-inspected by farm youth. Thousands of hazards have been removed.

Fires may be essentially alike wherever they occur, but the problem of control differs according to location in city, town or country. Congestion of population may tend toward an increase in the hazard but it also facilitates extinguishment once a fire is started. Public concern increases with the probability of economic loss or suffering by others than the one on whose property a fire originates. American people resent regimentation with the result that rural areas will not for sometime, at least, be held rigidly to building codes, etc., which are now quite necessary in the more congested areas. The human element is so significant that an effective program must start with a stimulation of personal interest sufficiently strong to result in appropriate action. The general recognition of a problem is not sufficient. Editors of farm papers agree that safety on the farm, including fire safety, is a serious problem. They report however, poor readership on articles dealing with this subject. A program must be simple, easy of application and developed in such a way as to challenge the support of those involved. Threatened hazard of loss has not in itself proved sufficient. Recital of large numbers of potential hazards, tends only to confuse. A program must be adapted to the community for which it is intended. Emphasis on one aspect or another will depend upon conditions encountered.

A complete fire control program comprises two distinct operations distinguished primarily by the time of application. The first of these is prevention. If this part of the program could be made 100 per cent effective, there would be no need for the second part which is the extinguishment of unwanted fires. One need not worry about being able to extinguish a fire which never starts. As no one is so optomistic as to believe that all fires will be prevented, the extinguishing of fires is the second consideration. I would not want to say that one is more important than the other. Complete fire control cannot be had without both. Prevention however, is almost devoid of glamour. The worker has no evidence to submit of direct results. The inspection of a building with subsequent removal of hazards does not constitute evidence that a fire has been prevented.

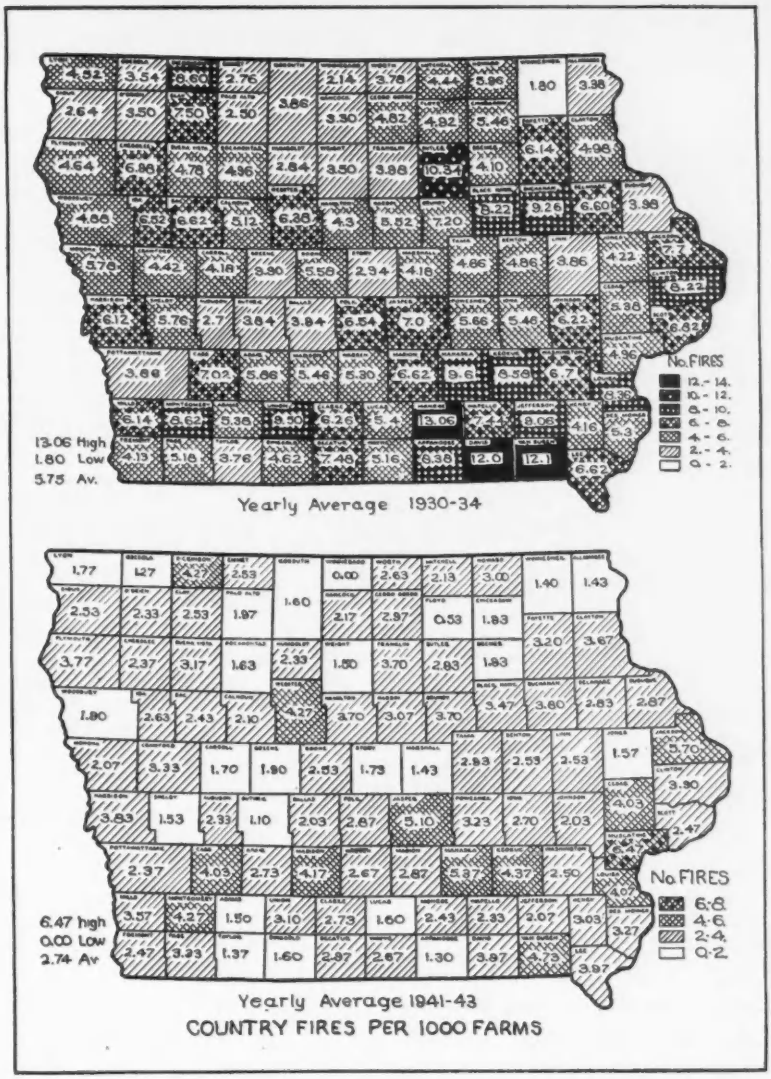
Problems in prevention may be divided into two groups, the first of which is associated with the construction of the building and the second with the management or housekeeping. Fire protection, or the extinguishment

of fires once started, which is an attempt to make the best of an already bad situation, may be divided into first aid activities on the premises and fire fighting equipment usually associated with civic or community organizations. The functions of all of these differ, hence, the emphasis in an overall program will vary according to location.

I shall confine this discussion primarily to rural problems and to prevention rather than protection. First let me point out the nature of the rural problem with some contrast to conditions in the city. Causes and exposures in the rural areas are different from those in the city. The danger of spread of fire from one man's property to another's is less in the smaller towns and may be almost lacking in the country. For this reason, the public is reluctant to regulate construction. Insurance companies can do much and are doing some to improve construction as it may affect the ignition or progress of fire.

Fire fighting apparatus must face handicaps over and above those encountered in the cities. Perhaps this is one reason why rural communities have been slower in buying apparatus and organizing for community protection. The probability of discovering a fire in its initial stages is less in the country than in the city. People to a less degree frequent the country highways by night and neighbors may be separated too far to see the small fire. Automatic alarms and protective devices are usually lacking. Telephone communication may be inadequate or lacking. Many rural telephone exchanges do not have operators on duty at night. One must rouse a sleeping operator who then must spread the alarm to a scattered volunteer fire company. The firemen then require time to dress and assemble at the fire station. All too often, the next dilemma is to locate the fire. Not long ago in response to an alarm, a fire company followed a glow on the horizon expecting it to be a burning corn crib. To their disgust and the owner's sorrow, it was only a grass fire. The crib was still burning, in quite a different direction. Obviously, the crib burned to the ground. The peak of dwelling fires in Iowa, occurs in February and March when many country roads are impassable. Lack of adequate water supply on the farm may defeat the efforts of the fire company even if all else goes well. Now don't misunderstand me. I have a very wholesome regard for a rural community fire fighting organization and own an interest in one myself. By all means let us have more of them. Let us however, make that a plus item over and above increasing effort on prevention.

The following will, I believe, illustrate my point. In the April 1945 issue of the Quarterly of the National Fire



The decline in the annual Iowa fire average per 1000 farms is illustrated. A glance will show the improved conditions in nearly every county. Though these two state charts go no further than 1943, the fire loss in rural Iowa is consistently decreasing.

Protection Association, I read "A total of 465 cities having more than 20,000 population reported a fire loss for the year 1944 of $131,000,000, amounting to an average loss per person of $2.56 for the 51,191,402 inhabitants of this group of cities." A similar study in Iowa discloses a per capita waste of $2.69 in cities over 2,500 population, $1.10 in towns and $1.08 in the country.

"The total number of building fires reported by 457 U. S. cities was 216,787, an average of 4.2 fires per 1,000 population." Experience in Iowa for the same period showed approximately 2.9 fires per 1,000 population in the cities, 0.67 in the towns under 2,500 and 0.40 in the country.

A total of 455 U. S. cities reported both loss data and the number of building fires. "The average loss per building fire in these cities for 1944 was $610." The corresponding figures in Iowa were $930 in the cities, $1,644 in the towns and $2,434 in the country. We have here a good picture not only of present conditions but also of the comparative problems. When fires per 1,000 population are considered, the larger cities of the U. S. experience approximately 6.25 times as many as in the towns of Iowa and 10 times as many as in the country areas of Iowa. This is a comparison for one year only. The loss experience is a different story with the loss per fire in the country being practically four times that in the U. S. city. The principal reason, that it is not still greater, is the fact that the property involved is less extensive. During a 15-year period (1930–44), fires in the small towns of Iowa aver-

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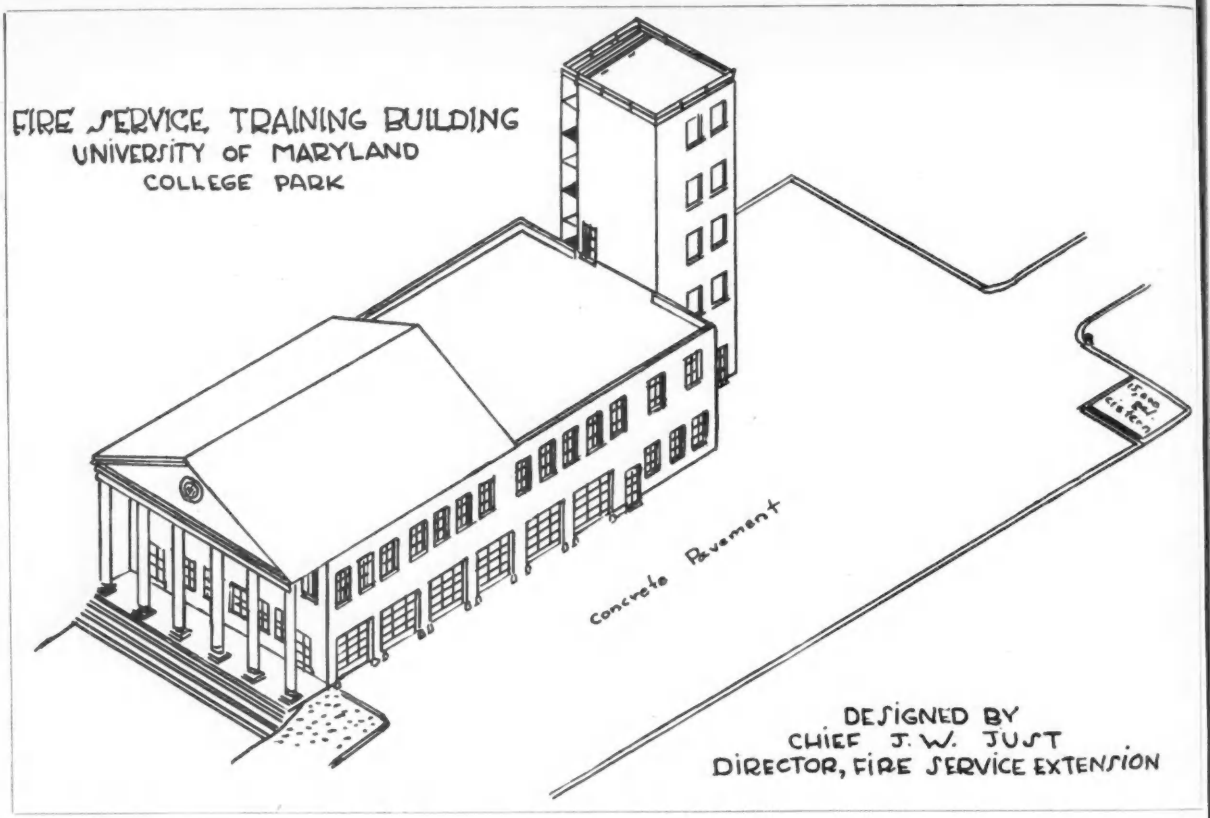


THE fire departments of Maryland are 98 per cent volunteer, according to Chief J. W. Just, Director of Fire Service Extension, University of Maryland. These Maryland Fire Departments are soon to enjoy the facilities to be provided at a new fire school building located at Maryland University, College Park. The new fire school building designed by Chief Just will include many features not found at other state firemen's training schools.

These facilities will include:

A five story brick training tower.

A 15,000-gallon cistern and a hydrant on an 8-inch main for instruction in pumper operation from both draft and hydrants.

A smoke room for training in the use of gas masks.

A fire protection laboratory with several types of automatic sprinkler valves, supervisory equipment, automatic fire detection devices, fire alarm equipment, room for experimental fires, chemical laboratory, dark room, demonstration room for cut-away pumps and other fire protection devices.

A library of firemanic and fire protection literature.

Guest facilities, study rooms for students, kitchen, etc.

Offices for the state fire service training program with supply rooms and mimeograph rooms.

The new fire service training building will be located on the University of Maryland campus on the Washington-Baltimore Boulevard, approximately 9 miles outside Washington, D. C. It will cost approximately $108,000.

The new training center will not be just a school building but will also be an operating fire station providing complete facilities for the College Park Volunteer Fire Department. This will place the local fire department closer to the rapidly expanding university plant and will provide protection for thousands of students on and off the campus.

The new training center will provide dormitory facilities for eight students selected from various parts of the state. It is also expected that the center will be the focal point for the Annual Short Course in Firemen's Training when it is resumed after the war.

The fire training program of the University of Maryland is sponsored by the Maryland State Firemen's Association and the State and Federal Vocational Education Departments. The program now provides:

a. A 201-hour training course for firemen.

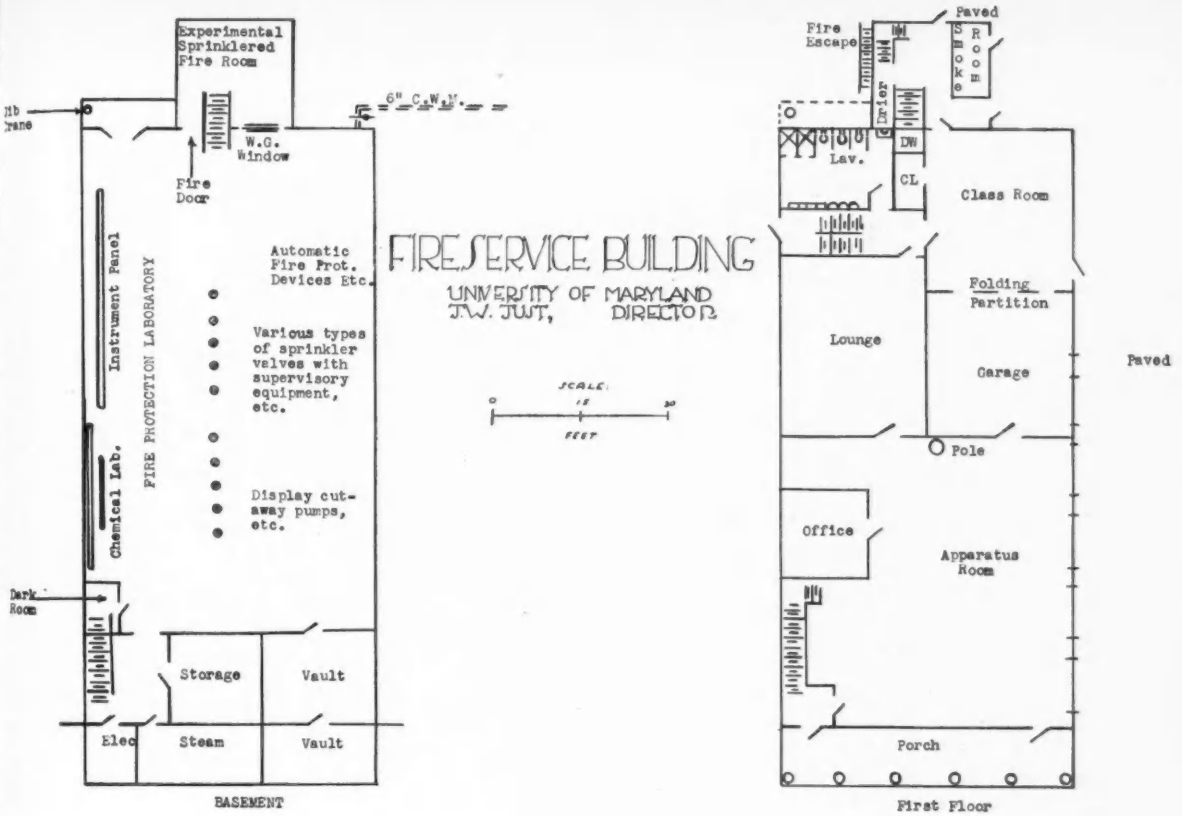
b. A 45-hour training course for industrial firemen.

c. A 30-hour training course for inspectors.

d. A 24-hour training course for fire marshals.

Additional courses will be added for plant watchmen, janitors and custodians, nurses and hospital attendants, public school teachers, and other groups. It is planned to include an arson detection school and laboratory.

In addition to the director, the department has three regional instructors, and 124 teacher-trained local instructors available to fire departments throughout the state. A total of 751 firemen were enrolled in the Maryland Firemen's Training Courses last year. Chief Just points out that as far as is known, the new training school building is the first of this type to be erected by any state government for the training of firemen. Governor Herbert R. O'Conor of Maryland informed the president of the Maryland State Firemen's Association that the Maryland Board of Public Works has approved the building and that work is expected to begin this summer. The building will be of two-story Colonial brick construction matching other buildings on the campus. It is hoped that the new center will serve to establish a precedent that will be followed by many other states maintaining firemen training programs.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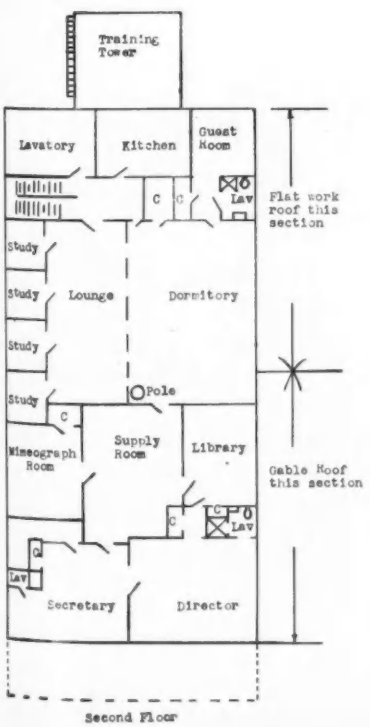
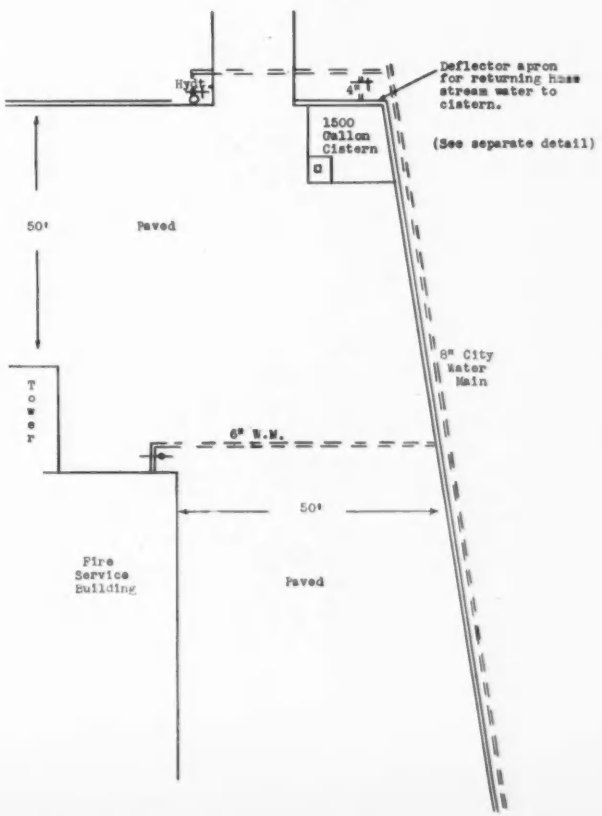
Chemical Lab.
Automatic Fire Prot. Devices Etc.
Various types of sprinkler valves with supervisory equipment, etc.
Display cut-away pumps, etc.
Dark Room
Storage
Vault
Elec
Steam
Vault
BASEMENT
Fire Escape
Paved
Smoke Room
Lav.
DW
CL
Class Room
Folding Partition
Lounge
Garage
Paved
Pole
Office
Apparatus Room
Porch
First Floor


Training Tower
Lavatory
Kitchen
Guest Room
Lav
Flat work roof this section
Study
Study
Lounge
Dormitory
Study
Study
Pole
Mimeograph Room
Supply Room
Library
Gable Roof this section
Lav
Lav
Secretary
Director
Second Floor


Deflector apron for returning hose stream water to cistern.
(See separate detail)
1500 Gallon Cistern
50'
Paved
8" City Water Main
Tower
6" W.M.
50'
Fire Service Building
Paved

Bingham Canyon, Utah

Protected by Company No. 1 Volunteer Fire Department (Member N. F. P. A.)

BINGHAM CANYON'S career began when the first mining claim in Utah was staked in September in 1863. Today the Canyon is rich in the traditions of the mining industry. Over 30 per cent of the copper produced by the United States for the war effort comes from the Utah Copper Mine in Bingham Canyon.

The geography of the town of Bingham Canyon, whose 3,000 inhabitants live along the one main street on the floor of the narrow canyon, makes it necessary to have two fire departments, one at either end of the town. Chief Earl T. James of the Bingham Volunteer Fire Department, Company No. 1 (member N.F.P.A.), wrote that "The city has two company fire chiefs, with each company having jurisdiction over their section of the city. At fires all firemen work together as a unit. This arrangement was started in the early days of the hose cart when the length of the city made it necessary to have stations located at both ends of the city." Once a month both companies meet together. Weekly meetings are held by each company individually.

Company No. 1's two-story fire station houses a 750-gallon triple combination American La France pumper, one 500-gallon triple combination International chassis and Champion centrifugal pump, and a utility truck with fresh air unit and salvage equipment. The company has had first aid training with complete equipment for taking care of the injured.

In first aid work, Company No. 1 was instrumental in getting first aid contests run off at the annual firemen's conventions. The Bingham Canyon Volunteer Fire Department, Company No. 1, team won the championship of the Utah-Nevada Safety Association in 1933, competing against industrial and municipal teams.

Since the Utah State Firemen's Association was organized in 1908, twelve years after Utah entered the union, the company has been an active charter member. For the past ten years they have attended tournaments at the state association meetings and have carried on their own educational program with inspections and care of equipment.

Five of the Bingham Canyon firemen have served as president of the Utah State Firemen's Association, and at present one of the fire department members is serving as secretary for his thirteenth consecutive term.

The geography of Bingham Canyon, the fact that the majority of the homes are of frame construction, the congested single main street, and the huge open pit copper mine on every side of the Canyon present an ever-present need for an alert fire department.

A SERIES of disasters in past years have several times laid low the mining towns up and down the canyon. On September 8, 1932, a fire broke out in the abandoned Princess Theatre and swept across the canyon, cutting in half the adjoining town of Highland Boy.

No sooner had a curl of smoke been noticed than the boarding house next door to the theatre was ablaze. A veteran miner was one of the first to spread the alarm of fire and gave a vivid report of the rapidity with which the flames spread. "The place had been drying out all summer and burned like so much gasoline, with flames spreading in all directions."

The frame buildings, built so closely together and dried to tinder by the desert sun, flared up all along the street as sparks landed on them. Shacks 250 feet above the Canyon floor caught fire from the heat radiated from the inferno raging down in the town.

Attempts to control the fire were useless. The main line of hose was burned apart and water pressure was lacking. The fire was first noticed at 3:20 in the afternoon, but by 6 P.M., with the combined efforts of Companies 1 and 2 from the Bingham Canyon Volunteer Fire Department, the Murray Fire Department, the Salt Lake County Fire Department, and the fire departments of the Utah Copper Company and the Utah-Delaware Mining Company, the fire was confined to a small area to burn itself out.

In all, sixty-three buildings were destroyed and damages were estimated at $350,000.

Above—Practically impassable when shifts at the mines are changing, this one main street serves all of Bingham Canyon.

The event of this fire recalled a series of calamities to the "canyon of mines." In August, 1924, a fire raged in the Canyon that destroyed twelve places of business and made six families homeless. Two volunteer firemen were killed in fighting this fire that started in the basement of a butcher shop and caused an estimated loss of $100,000.

After each of these disasters a new start in life was necessary for many of the inhabitants of the Canyon. Perhaps the excellence of the Bingham Canyon Volunteer Fire Department, Company No. 1, may be the result of a determination to be fully trained and prepared for any future catastrophe.

Below—Looking down the narrow Canyon toward the copper mines. It is not hard to imagine the difficulty of fighting fires in this city where the fire apparatus has scarcely room to turn around.

Funds for Fire Station Plans

THE July 1945, Bulletin of the League of South Dakota Municipalities points out that $17,500,000 for public works planning will be allocated by the U. S. Federal Works Agency through their established field offices to assist state and local governmental agencies in making plans for postwar public works. The purpose of this Federal Loan Fund is to encourage states and their political subdivisions, including cities and towns, to complete the plan preparation of specific public works and to take other steps necessary to enable them to undertake the construction of their public works when materials and manpower become available. The types of public works for which funds will be advanced for the plan preparation include such projects as highways, bridges, airports, sewers, water and sanitary facilities, schools, hospitals, police and fire stations, parks, and recreation facilities.

Any non-federal public agency may apply for an advance for any public work that it is authorized to construct or that it expects to construct within three years after the war. Public agencies include state governments and their political subdivisions, such as cities, towns, townships, counties, special taxing districts, and other duly authorized public agencies. As many communities need new fire stations, fire departments should not be backward in having their community request their share of this federal fund.

First Aid Fire Appliances

2. Foam Extinguishers

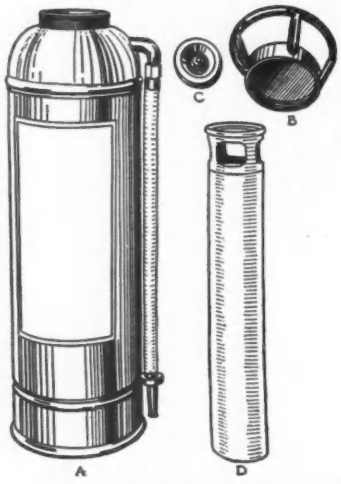
This article, one of a series on the use of first aid fire appliances, was taken from National Fire Protection Association's Recommended Standards for the Installation, Maintenance and Use of First Aid Fire Appliances. National Fire Codes for Extinguishing and Alarm Equipment, 1943, pages 299-304.

APPROVED hand foam fire extinguishers are made in three principal sizes, one having a liquid capacity of 1¼-1½ gallons, and the others 2½ and 5 gallons. Chemicals used are bicarbonate of soda and a foam-stabilizing agent dissolved in water for the outer compartment and aluminum sulphate dissolved in water for the inner cylinder. The extinguishing agent is a foam which results from the reaction of the two chemical solutions.

The extinguishers are designed to be carried to the fire by means of the top handle and, to be used, must be inverted. When the chemicals mix as a result of the above operation, foam is produced and pressure is created within the container which expels a stream of foam through the hose. While the stream is usually most effective when directed from a distance, it may be used close to the fire. In case of necessity it can be directed effectively from a distance as great as 30 to 40 feet horizontally.

These appliances are effective on incipient fires in ordinary combustible materials such as wood, paper, textiles, rubbish, known as Class A fires, where the quenching and cooling effect of quantities of water or solutions containing large percentages of water is of first importance.

They are effective on fires in small quantities of flammable liquids and greases, in vats or other open vessels or on floors, and other Class B fires, where the foam may be retained as a blanket on the burning material.



The various parts of the conventional 2½-gallon foam extinguisher are shown above. (A) Tank or "Outer Container"; (B) Ring top or cap with gasket in place; (C) Head stopple; (D) Inner container.

Their use in connection with fires in electrical equipment such as panel boards, switch boards, motors, and the like is not recommended. In some cases fires in electrical equipment may be such that the quenching and cooling effect of large quantities of water or solutions containing large percentages of water is necessary. In such cases equipments should be made electrically dead before applying water or water solutions.

The force, length and duration of the stream are not dependent upon the operator. The 2½- and 5-gallon extinguishers discharge an effective stream of foam for approximately one minute; the 1¼- 1½ gallon device approximately ⅔ of a minute. The 1¼- 1½-gallon extinguisher is readily handled by women.

The 5-gallon foam extinguisher is intended for special use in commercial and industrial establishments where it may be desirable to have more foam delivered by one unit than can be delivered by a 2½-gallon foam extinguisher and where persons of ample strength, usually men and specially instructed in their use will employ them.

One 2½- or 5-gallon or two 1¼- 1½-gallon extinguishers is considered as a unit for Class A or Class B fires. Units shall be distributed in accordance with the recommendations included with the description of soda-acid fire extinguishers on page 13 of the July issue of VOLUNTEER FIREMEN.

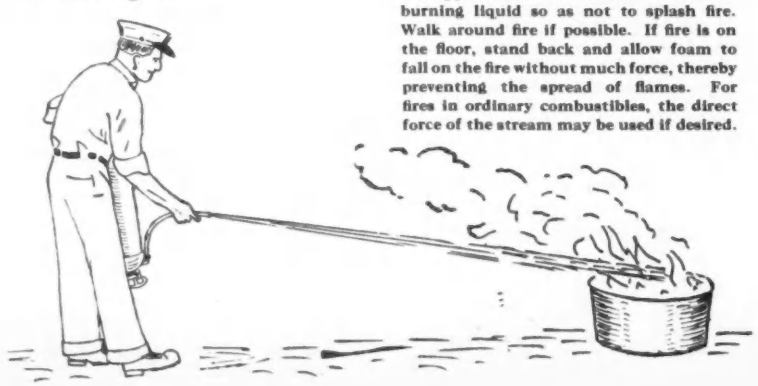
Extinguishers shall be conspicuously located where they will always be readily accessible and so distributed as to be immediately available in event of fire. They shall be hung on hangers or set on brackets or shelves so that the top of the extinguisher is not more than 5 feet above the floor for 1¼-1½- and 2½-gallon devices, and 3½ feet for 5-gallon devices.

Extinguishers shall be recharged annually as well as immediately after use. In recharging these extinguishers, all parts shall be washed thoroughly with water and the water drained through the hose.

Extinguishers shall be examined at regular intervals — several times a year — to make sure that they have not been tampered with or removed from their designated places; to detect any injuries; also to see that they are not empty and that the orifice of the hose nozzle is not clogged.

At least once yearly, before emptying and recharging, the extinguishers and all their parts (including gasket and hose) shall be examined for deterioration or injuries due to misue and the orifices of the hose nozzles examined to see that they are not clogged. Extinguishers or parts which are not in good condition shall be replaced. At these annual inspections, all extinguishers of this type shall be emptied and recharged. Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher. When extinguishers are to be recharged, each should, where practicable, be emptied by discharging it. At each annual inspection, one or more of the extinguishers should be discharged as if at a fire

For flammable liquid fires, the stream should be directed against the inside of the opposite wall of the tank above the burning liquid so as not to splash fire. Walk around fire if possible. If fire is on the floor, stand back and allow foam to fall on the fire without much force, thereby preventing the spread of flames. For fires in ordinary combustibles, the direct force of the stream may be used if desired.



and before an assembly of the occupants of the building.

The chemicals shall be thoroughly dissolved in water outside the extinguisher and in exact accordance with instructions on the extinguisher or charging unit. The water should preferably be lukewarm (never hot).

On every property where extinguishers of this type are employed, there should be kept on hand a quantity of chemical charges supplied by the manufacturer for use in such extinguishers so that extinguishers may be promptly recharged after use.

When located where continued temperatures lower than 40° F. may be encountered, extinguishers of this type shall be placed in suitable heated cabinets. Anti-freeze ingredients such as common salt or calcium chloride must not be used in extinguishers of this type, as they may either reduce the effectiveness of the discharge (and chemical reaction), change the nature of the discharge, or corrode extinguishers so as to make them dangerous when used.

★ ★ ★

First Aid and Rescue

Continued from page 7

with the Red Cross to provide general assistance, care, and transportation of the injured. Some of the accomplishments of the Council have been to establish the first plasma bank for civilian use, the development of a cooperative plan of mobilization of emergency gear and personnel, and a change in the old improper method of handling accident victims through the use of the slogan, "Let 'em Lie!"

The motto of the Rockland County Emergency and First Aid Council, Inc. sets the keynote for all the fire department first aid assistance squads in the country, "What is more worth saving than a human life?"

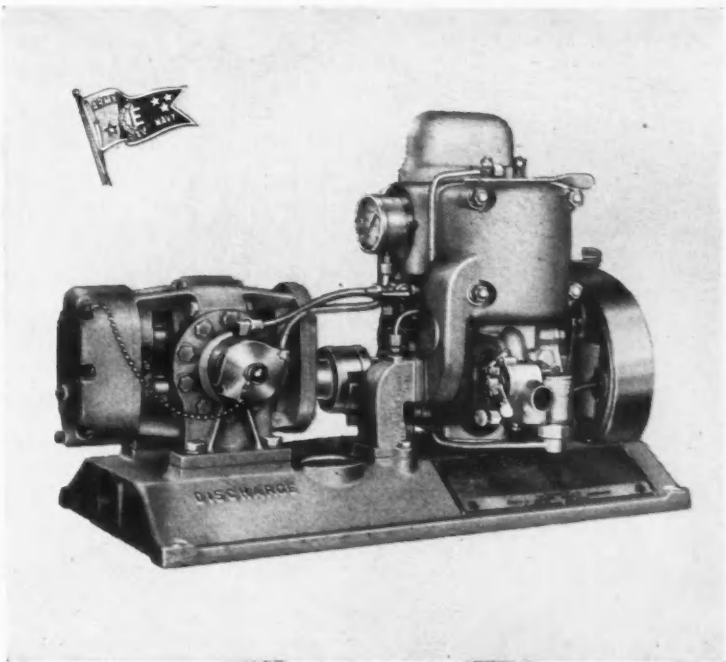
★ ★ ★

FIRE SCHOOL NOTES

Pennsylvania. The Annual Pennsylvania Firemen's Training School will be held at Lewistown, August 6–10, according to an announcement by Edgar A. Spotz, Adviser, Fire Service Training, Public Service Institute.

The Western Pennsylvania Firemen's Training Institute announces the 1945 Firemen's Training School to be held at the State Teacher's College, in California, September 3–7. Both day and night sessions will be conducted. The school is sponsored by the Southwestern Pennsylvania Fire Chiefs' Association under the direction of the Pennsylvania Department of Public Instruction.

TYPE "Y"
Portable Pumper



While the major part of our manufacturing effort still is confined to production for the Navy, we once again are able to produce a limited quantity of our highly specialized fire-fighting Type "Y" Portable Pumpers for the forestry service, industrial plants and commercial shipping.

For weight and size, Pacific Marine Type "Y" is the most powerful portable pumper yet built. Base, 24 x 12 inches; height, 13 inches; net weight complete, ready to operate, 70 pounds.

CAPACITY

Pressure	100	125	150	175	200	225
Gallons per Minute	63	59	53	46	40	20

Manufactured by the

FIRE-FIGHTING EQUIPMENT DIVISION *of the*

PACIFIC MARINE SUPPLY COMPANY

SEATTLE, Washington

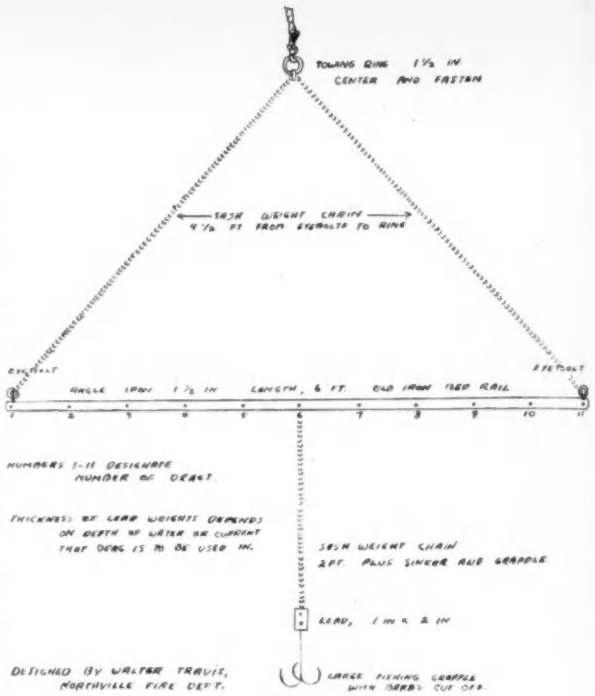
Special Drag Designed by Fireman

WALTER TRAVIS, of the Northville, New York, Fire Department, has designed this drag for use by his department. Assistant Chief Howard A. Dunham wrote of the uses to which this drag had been put. "This type of drag has been used several times with good results by both the fire department and also the state police. The troopers find it is much easier to handle than others they have used, and easier to carry in a car to the place needed. I sincerely hope that this may be of help to other departments."

The Northville Fire Department, member of the N.F.P.A. Volunteer Firemen's Section, has another drag designed by one of their members. The department's first aid squad is used more for drowning rescues than in any other field.

Among the other equipment housed by their central fire station is a Sanford pumper with a 150-gallon booster tank, an American La France pumper with a 300-gallon booster tank, and a quantity of chemicals and pack pumps.

In training work, the Northville Fire Department attended several county fire school courses given by the state of New York. The firemen have regular drills in handling equipment and pumping operations under Chief Glenn E. Duncan and Assistant Chief Dunham.


TOWING RING 1½ IN CENTER AND FASTEN
SASH WEIGHT CHAINS 4½ FT FROM EYEBOLTS TO RING
EYEBOLT
EYEBOLT
ANGLE IRON 1½ IN LENGTH, 6 FT OLD IRON TIED RAIL
1 2 3 4 5 6 7 8 9 10 11
NUMBERS 1-11 DESIGNATE NUMBER OF DRAGS
THICKNESS OF LEAD WEIGHTS DEPENDS ON DEPTH OF WATER OR CURRENT THAT DRAG IS TO BE USED IN.
SASH WEIGHT CHAIN 2 FT. PLUS SINKER AND GRAPPLE
LEAD, 1 IN X 2 IN
DESIGNED BY WALTER TRAVIS, NORTHVILLE FIRE DEPT.
LARGE FISHING GRAPPLE WITH BARBS CUT OFF

Welding Operations Fire Plant

Remarkable Stop Made Despite Lack of Water

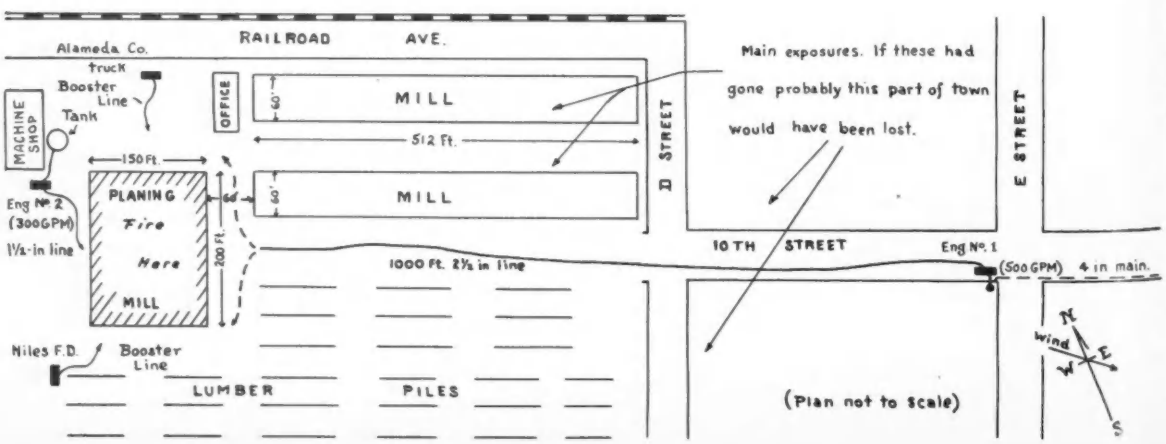
THE New Colma Mill and Lumber Company, Decoto, California, was completely destroyed by fire, Sunday morning, June 3. The company was engaged in making wooden boxes.

At the time of the fire, the plant was shut down and some repair work was being done in the planing room. Sparks from welding operations ignited sawdust and blowers that were in operation carried the fire throughout the structure in a matter of seconds. This plant was relatively new, of open-sided construction with corrugated iron on joist roof. The nearest hydrant was a thousand feet distant on a 4-inch main.

Utilizing the single available hydrant to save two 500-foot long mill structures and aided by water tank apparatus of neighboring fire departments, firemen prevented a conflagration from sweeping the town of Decoto. The Decoto Fire Department consisted of a 500-gallon pumper and one 300-gallon pumper. The Niles Fire Department assisted with a 400-gallon booster tank, and the Alameda County Fire Patrol arrived with a similar unit.

Other departments responded from Centerville, Hayward, and Livermore. The Decoto department has seventeen members, all volunteers.

Chief Roland Bendel, of the Decoto Fire Department, said that good housekeeping would have prevented the fire. The department had tried to interest plant management in fire safety for more than two years, but it was reported that "they listened attentively but did nothing about it." In another report it was said that "the manager of the plant advised that he had tried for many months to extend town mains to the plant premises, but he could get no cooperation from town officials." Both of these reports said that a plant fire brigade should have been organized.



National Fire Protection Association's Directors Meet

THE Board of Directors of the National Fire Protection Association met in Boston on June 27. As travel restrictions prevented the Association from holding its regular annual meeting, the gathering of the directors was also constituted as the Annual Meeting. This year would have been the 49th Annual Meeting if war and travel conditions had permitted the convention.

The following officers of the corporation were elected for the year 1945–46: President, Richard E. Vernor, Chicago; Vice-President, C. C. Johnson, New York City; Vice-President, E. O. Shreve, Schenectady, N. Y.; Secretary-Treasurer, Hovey T. Freeman, Providence, R. I.; Chairman, Board of Directors, George W. Elliott, Philadelphia.

It was voted tentatively to hold the 50th Annual Meeting in Boston, subject to any change necessitated by war conditions or government regulations.

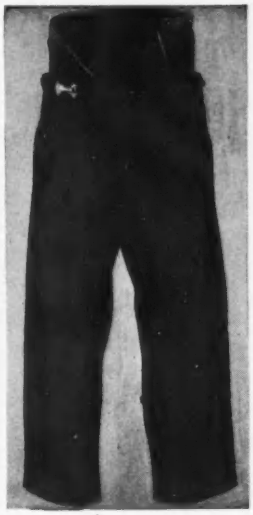
The Chairman of the Board was authorized to appoint the Program Committee for the 1946 Annual Meeting including the President, the Chairman of the Board, the General Manager, and such other members as may be deemed appropriate in view of future developments. It was agreed that, conditions permitting, the program of the 1946 Annual Meeting should include fitting commemoration of the development and progress made by the Association during its first 50 years.

Instructor's Manual

CHIEF JOSEPH I. FETTERS, Assistant State Supervisor, Trade and Industrial Education, in charge of the Nebraska Fire Training Program has recently issued a 75-page "Instructor's Manual" designed as a guide for training fire departments that have completed the 6-week course in fire engineering conducted by the State Department of Vocational Education. This "Instructor's Manual" contains a very impressive array of material that will be of invaluable aid to local fire department instructors.

Subjects covered include Arson, Attack of Fires, Automatic Sprinkler Systems, Dry Pipe Systems, Electricity and the Fireman, Elevator Fires, Fire Extinguishers, First Aid, Gasoline Transports, Common Fire Hazards, Hose Evolutions, Hydrant Evolutions, Hydraulics, Inspection, Ladder Evolutions, Masks, Plane Crashes, Public Relations, Pumps and Pumping, Small Tools, Salvage, Signals, Special Fires, Special Systems, Ventilation, Wet Pipe Systems. The manual differs from the usual fire training manual in that it is arranged as a guide for instructors.

NOW AVAILABLE!



Regular Fireman's Boots available ¾ length, reinforced instep, felt linings. New synthetic rubber, not reclaimed.

MIDWESTERN FAMOUS COMBINATION SUIT

Midwestern protective clothing is manufactured exclusively for professional firemen and policemen all over America. A great part of this protective clothing is used by government aid plants and is becoming more popular each year because of the rugged, extra durable materials used. The needs of our fighting forces come first, of course, but the same fine quality is available for you. Write your Midwestern representative for complete information and samples of material now available or write the factory direct.

OUTFIT NO. 101

Combination suit in either rubber or canvas. Can be bought separately. Detachable wool linings. Flexible elastic inner sleeve to keep out water, cold and sparks. Sturdy construction. Bunker Pants have reinforced crotch for pole sliding. Write today.

MIDWESTERN MFG. CO.
MACKINAW, ILLINOIS

FEDERAL ELECTRIC COMPANY, INC.
SIREN HEADQUARTERS

How
POWER
is built into this
FEDERAL
***Traffik-King* SIREN**

Oscillating Red Light;
Single or Double Tone; Coaster Model

The tremendously powerful tone of Federal Traffik-King sirens demands attention over other traffic noises, clears the way. This model has a distinctive double tone; and it coasts almost two minutes after current is off. Special clutch mechanism releases rotor; coasts much longer than so-called "long roll" types, which seldom roll over 30 seconds. Electric solenoid brake on rotor stops sound instantly. Durably built for long, dependable, maintenance-free service.

Rotors: cast aluminum, precision-machined, individually balanced. Thin, smooth blades for high efficiency.

Ports in rotor and stator accurately spaced, finished to square sharp edge; assure true pitch, powerful tone.

Motors: heavy duty; bronze or ball bearing; 6 or 12 volts.

WRITE for FREE BULLETINS

Details, illustrations, prices, on this and other FEDERAL Sirens

8717 SOUTH STATE ST., CHICAGO 19, ILL.

View of the burned district. This fire was considered to be the inevitable result of the lack of adequate building regulations in the community. In the congestion of frame constructed buildings with comparatively high contents value, there was not a single fire break in a block area of 30,000 feet. The losses have been estimated at approximately $1,000,000.

CONFLAGRATION—Mahanoy City, Pennsylvania

Volunteers From 10 Companies Fight Big Memorial Day Fire

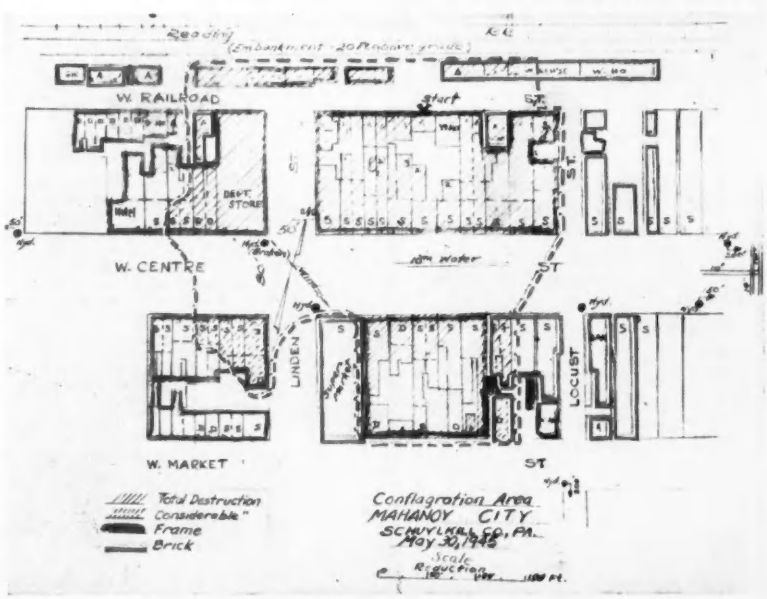
MEMORIAL DAY in Mahanoy City, Pennsylvania, will henceforth be remembered as the date of a conflagration which destroyed 30 buildings, 4 dwellings, numerous garages and seriously damaged 15 other structures. These buildings covered an area of four city blocks and housed forty mercantile and office occupancies, in addition to thirty-eight apartments.

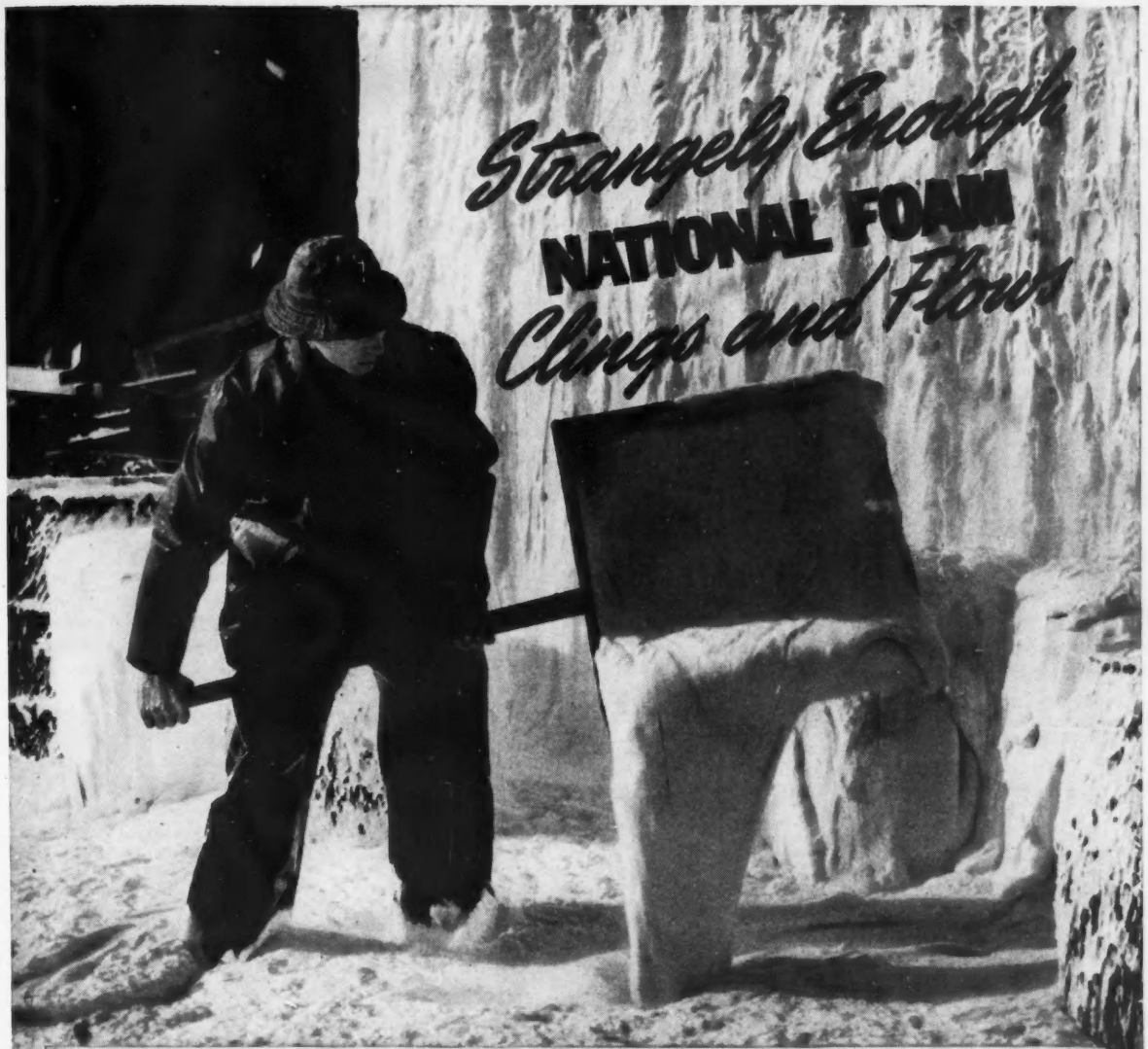
This fire, which was discovered at 3:10 A.M., was the work of a 45-year old pyromaniac who left a local saloon at closing time, gathered oily waste from a journal box of a railroad car and pushed the torch under the door of a small frame garage. He was later apprehended aiding firemen in the evacuation of buildings and admitted setting six previous fires in the city. He was sentenced on sixteen indictments to a total of 70 to 140 years in the state penitentiary.

At the time chosen for the fire, the wind was blowing at 50 miles an hour. Fortunately the water supply in the fire area was the strongest in the city, with large mains amply cross-connected. Fire companies reported satisfactory quantities of water. Fourteen hydrants were used. One defective hydrant broke off and impaired a 10-inch main.

Five local fire companies utilized seven pumpers and were aided by three OCD auxiliary pumper companies. Companies were present from Tamaqua, Ashland, Frackville, Gordon, Centralia, and Gilberton. Shenandoah, Columbia, and Park companies operated on fire patrol and evacuation work. Fifteen pumpers operated from hydrants and two obtained draft from a creek. A total of seventeen pumpers supplied hose streams.

A water curtain failed to prevent radiated heat from crossing an 80-foot street and involving several additional blocks of stores. Excellent work was done in preventing further extension of fire throughout the frame buildins comprising most of the fire area.





Seemingly impossible, NATIONAL FOAM flows freely as well as clinging fast. And since seeing is believing, note the man (above) shoveling the heavy, tough lather of Aer-O-Foam bubbles while the same fire extinguishing substance sticks close to the vertical surface behind him.

The "bean soup", as the U. S. Navy respectfully calls Aer-O-Foam, flows quickly and easily over any surface afire, literally smothering it. Walls either aflame or threatened by fire are as rapidly plastered with Aer-O-Foam which forms an airtight blanket snuffing out flames or insulating any surface against them.

Proved effective everywhere, this development of National Foam has fought alongside our fighting men all over the world (4,000,000 gallons having been supplied for the Navy alone). Aer-O-Foam is now available for protecting the home front.

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for use of Fire Departments to meet all types of foam fire fighting requirements.

BACK THE ATTACK—BUY WAR BONDS

NATIONAL FOAM SYSTEM, INC.

SPECIALIZING IN FOAM FIRE PROTECTION

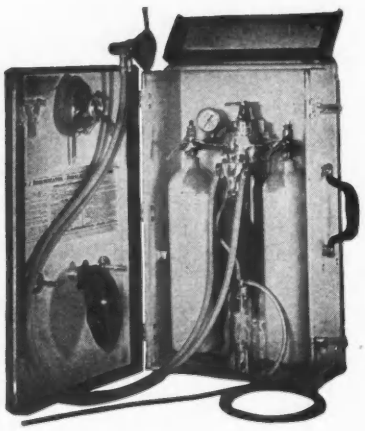
Packard Building, Philadelphia 2, Pa.

E & J RESUSCITATOR INHALATOR AND ASPIRATOR

•

This ingenious life saving instrument has an outstanding record of reviving critical cases of respiratory failure caused by drowning, electric shock, carbon monoxide, asphyxia of the Newborn, etc.

•



ASK YOUR DOCTOR

The E & J Resuscitator has been Accepted by the Council on Physical Medicine of The American Medical Association. It is simple to operate and safe to use. No bodily pressure is necessary as the unit automatically inhales and exhales for the non-breathing patient. A large majority of the outstanding hospitals, industrials and rescue squads employ the E & J Resuscitator.

YOUR RESCUE SERVICE IS NOT COMPLETE WITHOUT MECHANICAL RESUSCITATION — AND THIS MEANS "E & J" IF YOU WANT THE BEST

E & J MANUFACTURING CO.
GLENDALE, CALIFORNIA
Pioneers and Specialists in Mechanical Artificial Respiration

Drexel Bldg. Philadelphia	17 E. 42nd St. New York	2144 N. Springfield Ave. Chicago	581 Boylston St. Boston
530 Fernando St Pittsburgh	3032 W. 25th Ave. Denver	3900 Grandy Ave. Detroit	5005 Euclid Ave. Cleveland

Rural Fire Control

Continued from page 9

aged 26 per cent of total demolition. In the country areas, the damage averaged approximately 71 per cent of demolition. Furthermore, during the 15-year period there was no improvement in the salvage of country property.

Complacency on the part of the occupant is a principal problem in fire prevention. He must be shown first that results can be obtained and that the required measures are simple.

An analysis of the situation in Iowa discloses the fact that it really is simple. During the 15-year period 1930–44, losses to dwellings and barns comprised 94 per cent of the total country loss when definitely non-farm buildings are excluded. This figure comprises 68 per cent to the dwelling and 26 per cent to the barn. All other structures involved account for only 6 per cent of the total. To begin with then, for the sake of simplicity, we can just as well forget about the other buildings and concentrate our prevention efforts on the dwelling and barn.

Defective flues and heating systems are responsible for 42 per cent of the dwelling fires resulting from known causes. Likewise 31 per cent result from sparks on combustible roofs. Some 28 other causes are responsible for only 27 per cent of the total number. Fires from these causes occur principally during February and March.

The spontaneous ignition of hay and straw is responsible for 41 per cent of the barn fires from known cause. Thirty per cent are caused by lightning striking barns not equipped with lightning rods. The small loss by lightning striking rodded barns would doubtless be reduced or practically eliminated if more care were taken in installing and maintaining such equipment. Only 29 per cent of the fires are the result of some 28 other causes. These fires occur during the midsummer. From this it is apparent that concentration upon two causes in winter and two causes in summer is potentially profitable in reducing fire waste in the country. Three of these being related to the structure, can be identified easily by an informed inspector and remedial measures taken.

The spontaneous ignition of hay and straw, being associated with management, may be rather troublesome but need not be disastrous. The increase in the use of leguminous hays together with a growing appreciation of the desirability of saving a maximum of leafy material has tended toward a corresponding increase in the number of fires from spontaneous ignition during

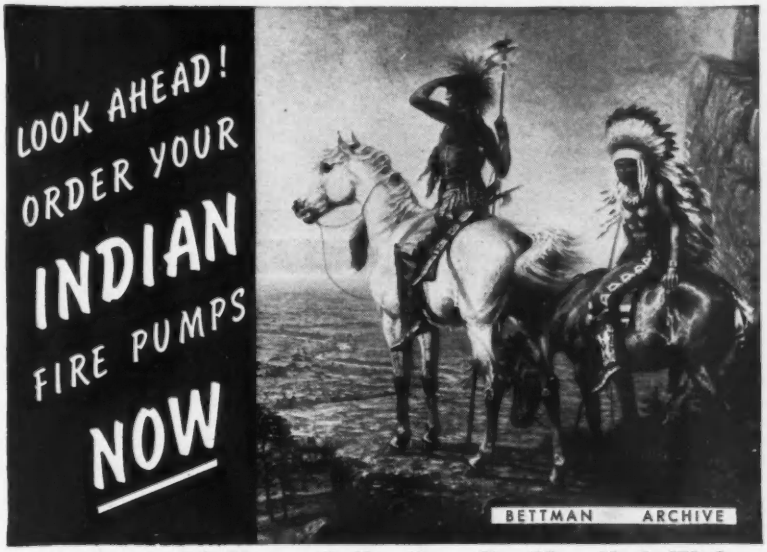
recent years. Leaves dry more rapidly than the thick stems with the result that if the hay is left in the field until the stems are dry, the leaves tend to drop off in handling. If on the other hand, the hay is harvested while the leaves still adhere, there is a probability of spontaneous heating and ignition later. Recently introduced methods of drying the hay in the mow, may, if adopted extensively, tend to improve the quality of hay and eliminate the hazard of fire. In the meantime however, perhaps the best we can do is to caution the farmers about the danger and to advise them what to do in case trouble is encountered. Two favorable factors are first (1) only a small portion of the hay in a mow is usually involved and (2) pungent odors well in advance of actual ignition give ample warning to an alert operator. If heating occurs and ignition is imminent, it is unwise either to attempt to remove the hay or to pour water on it. Removing the hay admits the air necessary to actual burning and is surely an invitation to further trouble. Wetting the whole mass down necessitates removing all of the hay. Hay then wetted will almost surely burn later if not removed. Wetting it will also impair or destroy its value as hay. Carbon dioxide as used by soda fountains, has been used successfully for cooling the hot portions and smothering the fire so that all affected portions can be removed. Fire fighting apparatus should be in readiness in case trouble is encountered.

Fires ignited from adjoining buildings are of little significance in the country areas of Iowa. The situation varies from one community to another so that state-wide averages may be of little value in determining an overall situation. Where fires do spread from one building to another, they are more likely to start in the larger structure such as the dwelling or barn, and progress to the smaller such as the garage, wood shed, milk house, etc. As a general proposition, the expectancy of preventing spread of fire is likely to be disappointing in states with comparatively large farms and well scattered buildings and will not justify on the whole, a large investment in fire fighting equipment.

Earlier in this paper, I mentioned the fact that fires in rural Iowa have been generally on the decrease for a period of years and suggested that this has not been an accidental occurrence. Now I would like to tell what has been done and how.

In 1930 a research project on an investigation of farm building losses due to wind and fire was initiated in the Agricultural Engineering section of the

Continued on page 29



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Read Chief Odom's letter below telling of the many ways in which his department uses their **INDIAN FIRE PUMPS.** This letter is typical of hundreds we receive from enthusiastic fire departments.

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Fire Chief tells of many uses for INDIAN FIRE PUMPS

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We have **INDIAN FIRE PUMPS** *mounted on all our trucks. The reason I think so much of* **INDIAN FIRE PUMPS** *is because they are used to put out about 40% of the fire alarms that come in, such things as over-heated stoves, kitchen stoves, small blazes confined to one room and a great number of small fires around chimneys of wood and shingled roofs. We also get many fires in country homes which we take care of with* **INDIANS.**

Carlton Odom,
Fire Chief

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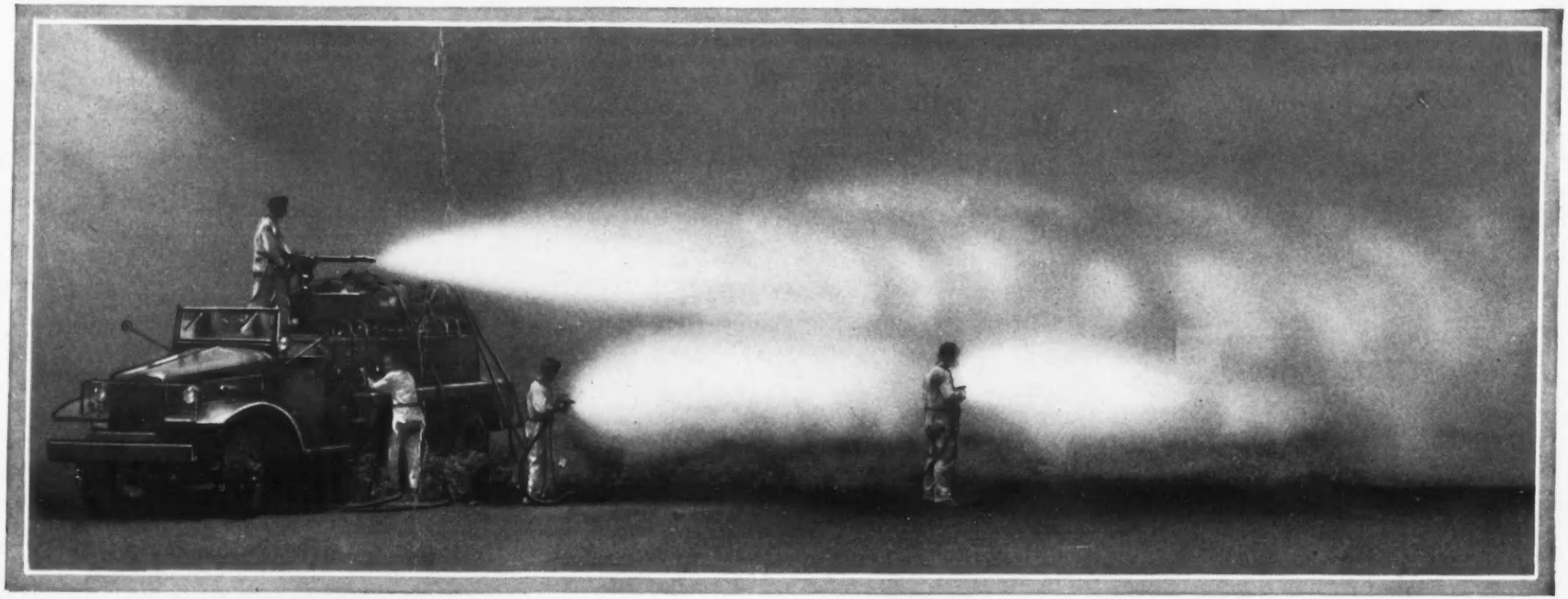

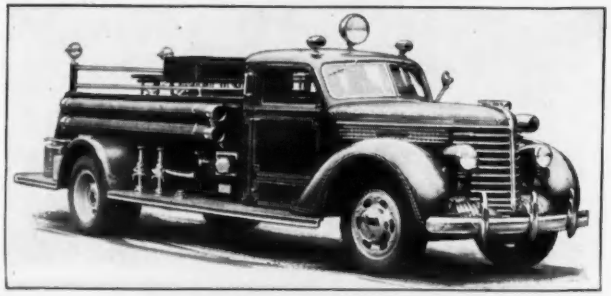

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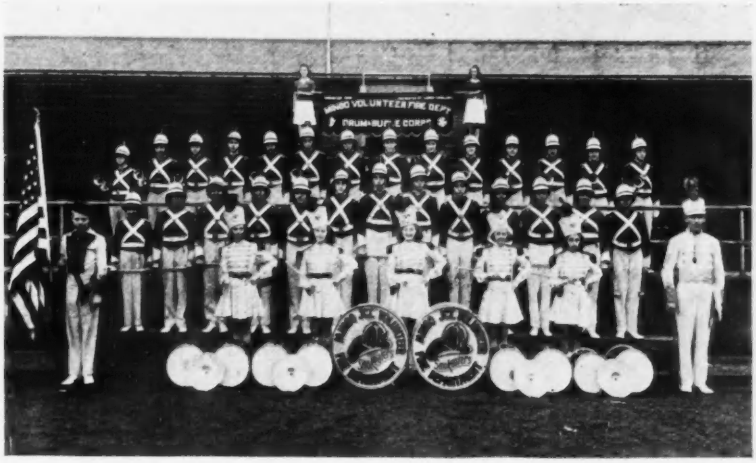
ARMY E NAVY

Entry Technique for Airplane Fires

AS a result of difficulties in getting through laminated glass sections during an airplane crash fire at an air service installation, tests were conducted by the Engineering Division of the Air Technical Service Command. The following results have been released to the fire service through VOLUNTEER FIREMAN by Captain George H. Tryon, III, U. S. Army Air Force.

"During the fire fighting operations after the B-29 crashed difficulty was experienced in penetrating the laminated glass sections in order to accomplish rescue of personnel trapped with the plane. Experiments conducted after the incident revealed that laminated glass subjected to sudden chilling by means of carbon dioxide extinguisher or Class 150 Crash Truck will be more easily penetrated, than when an attempt is made to shatter the glass without cooling.

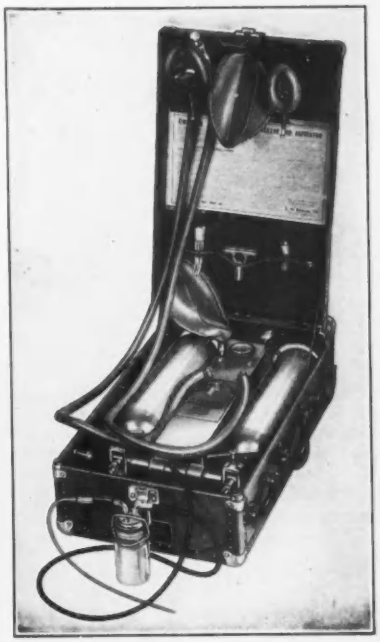
"The Engineering Division, Air Technical Service Command, has verified this experiment and has pointed out that glass contains a plastic interlayer which becomes brittle at low temperatures. The glass components of bullet-resistant glass or any other type of laminated annealed glass are not resistant to thermal shock involving sudden changes through wide ranges of temperature. The rapid cooling by carbon dioxide gas reduces the strength of the bond between the interlayer and the glass, causing possible fractures within the glass components."



Mingo Junction, Ohio. The Mingo Volunteer Fire Department Drum and Bugle Corps, pictured before the war when it was the finest in the tri-state area. Chief Joseph A. Grantonic wrote that the department has mutual aid agreements within a tri-county firemen's association which holds monthly meetings. The department owns one triple combination pumper, a Prospect Biederman rotary. A 750-gallon pumper will be purchased after the war.

South Parkersburg, West Virginia. Nineteen of the forty-five members of the South Parkburg Volunteer Fire Department are shown here in front of their fire house with its first aid emergency station. Nearly every fireman has had a 20-hour first aid course. Secretary-Treasurer Russell Lockhart reported that fire fighting service is entirely without compensation. All firemen must complete a 60-hour course given by the West Virginia University of Mines. Several members attended instructors' training courses.

LIFE
is Precious!



Protect it with
The EMERSON RESUSCITATOR

Far above the fireman's duty to protect property, high though that is, stands his responsibility for the protection of human life from unnecessary asphyxial death. This responsibility can best be met by equipping your rescue squad with the finest resuscitator available — Emerson!

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Write for literature or a demonstration.

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24 Cottage Park Ave.,
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FLOODLIGHTING
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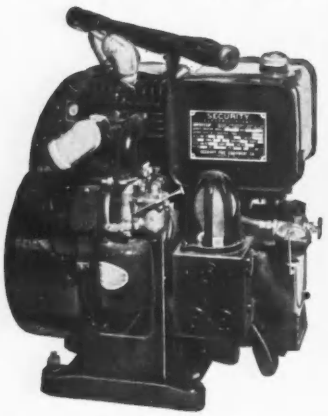

This 1500 watt portable generator, with 25% reserve, especially designed for fire department service. Lightweight, rugged and compact. Air-cooled 4-cycle engine 2¾" bore x 2¾" stroke. Quick starting. Fully guaranteed, thoroughly dependable.

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WAR BONDS

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On the Nylon Line - - -

by ANNE BAILEY Associate Editor

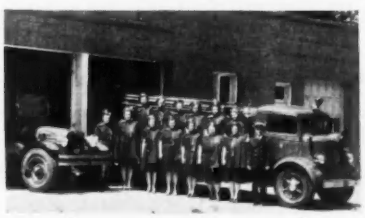
The Women's Auxiliary of the Friendship Hose Company No. 1, of Spring Grove, Pennsylvania, wrote that they formed "to promote more friendly interest among the wives, daughters, sisters, and mothers of the fire company."

THIS is no longer a man's world. The so-called weaker sex has entered nearly every profession where women were once traditionally excluded by "Men Only, No Women Wanted" signs. In some cases, it was a job that had to be carried on, no matter by whom; in so many instances during this long war, it has proved to be in very capable hands.

The fire fighting business has always been a strictly male activity, but as far back as 1911 there were two women's auxiliaries functioning to assist and serve their fire departments. The Ladies Auxiliary of the Edge Hill Fire Company in North Hills, Pennsylvania, was founded in 1909 "for the financial assistance of the Edge Hill Fire Company and to further the interests of same." In 1911 the Women's Auxiliary Fame Fire Company, Lewistown, Pennsylvania, had its first meeting. Thirty years ago and more, women were anticipating the generation that would see the women of World War II in the fighting uniforms of their country.

The Editors of VOLUNTEER FIREMEN realized that there are many unsung heroines doing their part to lessen the burden on undermanned fire departments all over the country. Accordingly, report sheets were prepared and distributed to all the women's auxiliaries to the N.F.P.A. Volunteer Firemen's Section member companies. The Editors felt that the contribution of the auxiliaries should be recorded in VF along with the work of the fire departments.

The auxiliaries participate in fire department work in many ways, from actual fire fighting to financial activities. A number of women's auxiliaries answer alarms with the firemen, know the evolutions, follow standard practices in combating fires, and otherwise do exactly what the men do. No advantages are given these auxiliaries when the alarm rings. The Hampton Heights Volunteer Fire Department, Wauwatosa, Wisconsin, has just such a group of women on equal footing on any ladder with the firemen. (See VF, December 1944.) The Gale's Addition Volunteer Fire Department, Port Angeles, Washington, reported a unique occasion of an auxiliary forming to provide their town with continued fire protection. Mrs. Eva Conaway, secretary, wrote, "In 1942, the men formed a volunteer fire department, but in 1944 they had lost interest, so the women took over." The firemen trained this auxiliary and they have attended two state firemen's schools, entering a team in hose-laying competitions. The Ladies



The Women's Auxiliary of the Arlington Heights Fire Department, Illinois, is shown in uniform with Chief Richard Jahn. Mrs. Amy M. Dobbins, secretary, wrote, "We have fourteen members and the lowest number we have ever had at a meeting is twelve." They have been meeting since September, 1943.

Continued on page 26

The Cost of a DELAYED ALARM

The spread of flames is accelerated by a Delayed Alarm — the attendant costs involve interruption of business and income — and frequently human life.

More than 1,000 communities with volunteer fire departments are now protected by Gamewell Fire Alarm Systems. A few boxes, properly distributed, will materially strengthen the fire defenses.

The Diaphone horn with coded signals saves time by directing the firemen to the scene of fire — or the boxes may be arranged to operate your existing public alarm.

DIAPHONE HORN
Operated by Compressed Air
The Circuit is shown connected with the Electric Control Valve.

Include In Your Post-War Plans
An Adequate
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Write for new Booklet
"It Can Happen Here"

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A permanent plaque, with individual names in silver on gold-bordered permanent name plates. Beautiful walnut plaque with eagle and victory torches. Write for price list today.

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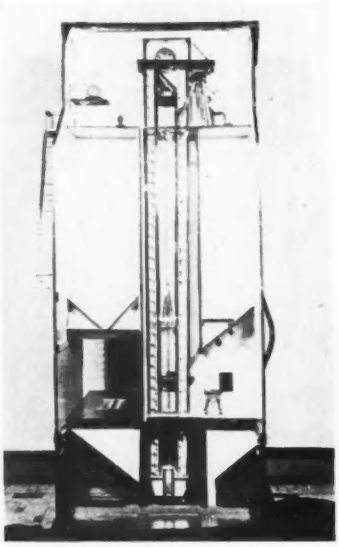
Elevator Model Used for Instruction



AFTER attempting, by means of word pictures and blackboard sketches, to demonstrate to firemen at their training school the peculiarities of the construction and arrangement of grain elevators, Harry Lehr, of the Grain Dealers National Mutual Fire Insurance Co. (member N.F.P.A.), hit upon the idea of building a model elevator.

The model, built on a scale of three-quarters of an inch to each foot, represents a simple frame elevator of 25,000 bushels capacity, dimensions 28 x 30 x 40 feet, with a 16-foot cupola and full basement. It is so constructed in sections that it may be taken down or assembled easily and quickly. There are some sixty sections comprising a total of approximately seven hundred and fifty pieces. The whole is mounted on a turntable so that all sides may be made visible to an audience.

In demonstrating, an outside wall may be removed to show bin construction. An outside basement wall is removed to reveal the bin bottom and dump arrangement. An inside partition next to the work floor, a side wall of the cupola and a section of cupola roof are removed to give a full view of all interior equipment. One side of the elevator leg has been left off so that the construction of the leg and equipment may be readily seen. The leg is not only complete in detail, but it actually operates by means of belt and counter-shaft drive from a motor in the basement.

The motor in the cupola is a "dummy" which catches fire realistically as part of the demonstration. Also the belt catches fire when the leg is choked, and the pulley is made to slip. The distributor, automatic scale, manlift (which operates with a passenger), burr mill, air compressor and another dummy motor on the work floor are all true to life.

Reprinted from "Our Paper," May 1945, published by The Grain Dealers National Mutual Fire Insurance Co.

"The Westwood Fireman"

THE Westwood, Michigan, Fire Department has recently issued a monthly newspaper entitled "The Westwood Fireman." This project is designed to acquaint residents of the community with the activities of the fire department and to give them essential information on how to sound an alarm, the importance of obtaining permits before burning grass, information regarding fire losses, and many other items of interest. The paper is prepared on a large mimeographed sheet and is illustrated by a large 7th War Loan appeal.

On the Nylon Line

Continued from page 24

Auxiliary to the Orchard Beach Volunteer Fire Department, Maryland, maintains a post right in the fire station. An auxiliary is on duty to answer alarms and to relay calls for help or ambulances until the firemen return from the fire.

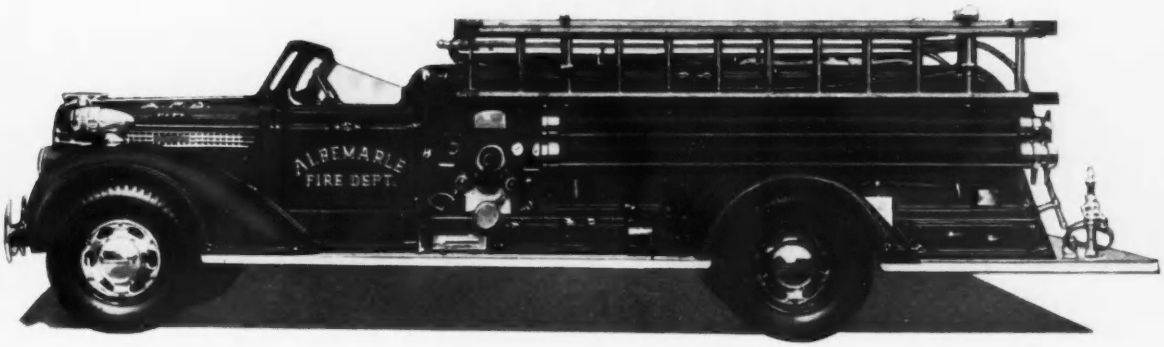
Less dramatic, but nonetheless essential are the Red Cross, OCD, and funds-raising activities of the majority of auxiliaries. In Red Cross training and home nursing courses, members of the Ladies Auxiliary to the Evans Center Fire Company, Angola, New York, stand ready for any emergency. The Women's Auxiliary of the Arlington Heights Fire Department, Illinois, studies moving pictures of first aid and fire prevention. They also can use the department inhalator. The Rockland, Maine, Fire Department Auxiliary is trained to operate any of their first aid equipment (*see page 6*).

There still remain a large number of women's auxiliaries whose activities will be of interest to VF readers, both firemen and fire women. There is an even greater number from whom the Editors would like to receive reports. If your auxiliary still holds an incomplete questionnaire, hurry it along that it may be included in the next issue.

FIRE APPARATUS **OREN** CUSTOM BUILT

"THE SOUTH'S ONLY FIRE TRUCK MANUFACTURER"

Modernizes another Department with a Custom Built Unit



A Custom-Built Triple Combination OREN with 600 G.P.M. Hale Centrifugal fire pump, 200 gallon booster tank, modern ladders and accessories. Mounted on a Diamond T Chassis and in use at Albemarle, N. C.

Each truck modernized, designed and built to meet the individual needs of the purchasing fire department . . . combining valuable features of both customer and Oren engineered ideas.

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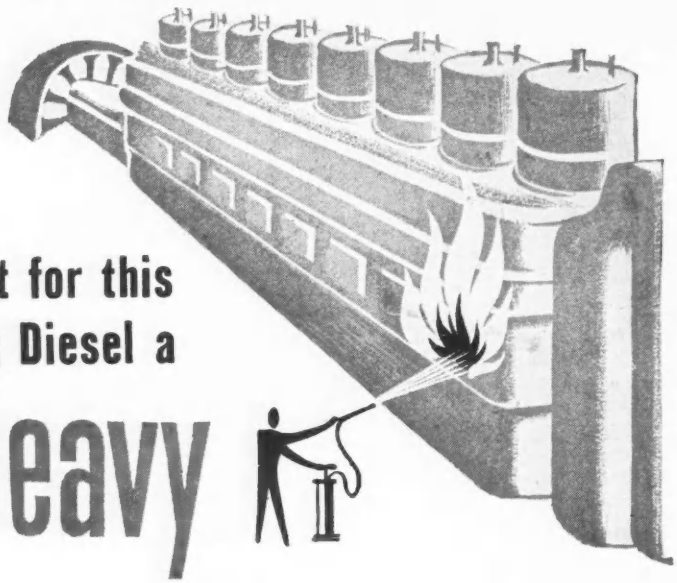
1201-9 West Salem Avenue, Roanoke, Virginia

For a small motor fire which might build up to a big blaze a one quart is ample protection.



But for this big Diesel a

heavy duty pyrene

pressure type extinguisher is a must.

The old saw "don't send a boy to do a man's job" applies aptly to fire extinguishers. In these rushing days of new processes, larger equipment, you should carefully check the capacity of your fire extinguishers against the possible job they may have to do. Or perhaps you will want to add more units of the same size extinguishers you are now using. A discussion about your fire hazards with a PYRENE Engineer entails no obligation. Write for details.

BY THE WAY. WHEN DID YOU LAST TEST THE FIRE EXTINGUISHERS IN YOUR HOME?

Standardize on Reliable Equipment by Pyrene

Pyrene Manufacturing Company

Founded 1907

NEWARK 8, NEW JERSEY

AFFILIATED WITH THE C-O-TWO FIRE EQUIPMENT CO.

MEMBERSHIP

MEMBERSHIP PLAN

● Through the Volunteer Firemen's Section, fire companies may become members of the National Fire Protection Association. As a member fire company, the department receives at headquarters a set of all regular N.F.P.A. publications. This includes the Quarterly, the monthly News Letter, posters and bulletins.

● Each member fire company has the Volunteer Firemen magazine sent to the homes of ten men at no extra charge beyond the ten dollars annual dues paid by all associate members of the N.F.P.A. All other N.F.P.A. members pay ten dollars without the ten copies of Volunteer Firemen.

● If more than ten firemen want to receive Volunteer Firemen, an additional dollar should be sent for each extra fireman listed to receive the magazine. Individual subscriptions are not accepted from departments not members of the N.F.P.A.

THE Empire State led again this month with the largest enrollment of new members in the N.F.P.A. Volunteer Firemen's Section. New York's 6 new enrollments topped Pennsylvania's 5 additional members.

The 26 new member companies listed below bring the section to a high of 1,234 departments:

Pepperell Mfg. Co., Opelika, Ala.
United States Spring & Bumper Co., Los Angeles 11, Calif.
Winona Lake Fire Dept., Winona Lake, Ind.
Garden City Fire Dept., Garden City, Kans.
Headquarters Panama Mobile Force & Security Command, New Orleans, La.
Windham Fire Dept., Windham, Me.
Norton Township Volunteer Fire Dept., Muskegon County, Mich.
Talmage Volunteer Fire Dept., Talmage, Neb.
Roxbury Fire Dept., Succasunna, N. J.
West Harrison Independent Fire Co. No. 1, E. White Plains, N. Y.
H. F. Northup Hose Co., Ellicottville, N. Y.
Union Hook and Ladder Co. No. 1, Inc., Lindenhurst, N. Y.
Gallupville Fire & Hose Co., Inc., Schoharie, N. Y.
South Salem Fire Dept., South Salem, N. Y.
Union Hose & Engine Co., Union Springs, N. Y.
Florence Township Volunteer Firemen's Association, Birmingham, Ohio
Reliance Hook & Ladder Co., Boothwyn, Pa.
Felton Hose and Chemical Co., Chester, Pa.
Homer City Fire Dept., Homer City, Pa.
Hope Hose & Fire Engine Co., Manheim, Pa.
Vigilance Hose Co. No. 1, Nazareth, Pa.
Franklin Volunteer Fire Dept., Franklin, Tenn.
San Juan Volunteer Fire Dept., San Juan, Texas
Lynden Volunteer Fire Dept., Lynden, Wash.
Weirton Volunteer Fire Dept., Weirton, W. Va.
Petawawa Military Camp, Petawawa, Ont., Canada

Rural Fire Control

Continued from page 21

Iowa Agricultural Experiment Station under the sponsorship of the Iowa Mutual Tornado Insurance Association and the Farmers' Mutual Reinsurance Association. One of the principal activities in connection with this project has been a statistical analysis of more than 26,000 rural fires reported during the 15-year period 1930–44, as required by law to the Iowa State Fire Marshal. The problem was appraised from many angles. Considering the importance of chimney sparks as a cause of fires, an extended study was made of the origin, nature and ignition ability of these sparks and means of restraining them within the chimney. A non-clogging spark arrester was developed and patented. Many thousands are now in service in Iowa and adjoining states.

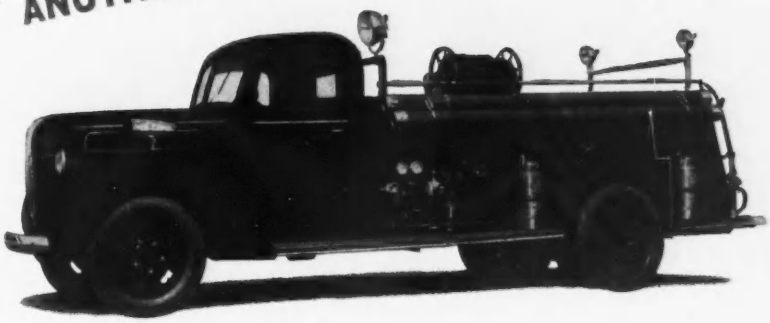
About 10 years ago, the sponsors of the project made available to the county mutual fire insurance associations of Iowa, an inspection bureau from which they could secure professional inspection service. From a modest beginning, this expanded rather rapidly until restricted by the manpower shortage incident to the war. The Agricultural Extension Service of the Iowa State College, in cooperation with the sponsors of the project, the State Fire Marshal and the Superintendent of Public Instruction, carried on an extensive educational program with farm youth through the 4-H Clubs, the Future Farmers of America and the public schools. How many self inspections were made by these young people is not known.

Fires in rural Iowa have declined rapidly and consistently even at a time when the national trend is definitely upward. We believe not only that fires can be prevented but also that they have been prevented. Prevention however, is not a job which can be done once and then forgotten. It is an activity requiring constant attention and frequent change in approach to secure results in spite of the obvious lack of glamour. Perfection in prevention, a very desirable goal is nevertheless unattainable. Prevention in itself is not a complete control measure. Fire fighting efforts must be increased. More equipment must be had. Closer cooperation is necessary between cities and the outlying country in order that farmers may have protection which will at least approach the effectiveness now attained in the city.

* * *

Mak Hon. Jap Fire Chief
ound Third Alarm
— BUY BONDS!

ANOTHER BARTON-AMERICAN PUMPER



BARTON-AMERICAN EQUIPPED

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Front and Midship Mounted

Centrifugal Fire Pumps

Capacities to 750 Gallons at conventional pressures as well as front mounted units for high pressure fog service, (600 pounds pressure).

AMERICAN-MARSH PUMPS, INC.

Battle Creek, Michigan, U.S.A.

— Pump manufacturers since 1873 —

"THE TOPS" for Safety & Quality

CAIRNS

One-Piece, Cushion-Lined

ALUMINUM HELMETS

These sturdy models are again available for prompt delivery; crown stiffened by corrugations and four heavy combs; brim reinforced by tempered steel wire rolled into beaded edge.

Let CAIRNS supply all your needs: — helmets of every description, in aluminum, leather or Flint-Flex; turn-out clothing, rubber coats, rubber boots, caps; fire record books, secretary's forms, etc.

Write for Catalog 131

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CIRCUL-AIR

FIRE HOSE DRYER

- Is easier to use
- Saves drying time
- Reduces hose stretch
- Prevents mildew and rot
- Improves building design
- Air-conditions as it dries

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MANUFACTURERS' ANNOUNCEMENTS

Kidde Extinguishers to Have New Trigger Feature

THE trigger control which has distinguished the smaller sizes of Kidde carbon dioxide fire extinguishers has now been extended to the larger portable models. Operated entirely with one hand, the new streamlined model is controlled by an upward pull of the index finger, the largest extinguisher requiring approximately the same trigger force as the smallest. It can be latched open when desired by a slight forward motion, and as easily disengaged to avoid wasting gas. This new control represents the perfection of a valve which is the result of many years of engineering research. The objects were to provide an on-and-off control of discharge with a minimum of effort; to permit a high rate of flow of the carbon dioxide, avoiding directional changes in its passage insofar as possible; to allow easy locking-open with

one hand; and to incorporate these features in a small, compact part, relatively light in weight and simple in design. These objects have all been accomplished in the new trigger valve.

The streamlined, one-piece handle closure protects the valve itself, is light in weight and fits the hand comfortably. Other improved features of the extinguisher as a whole are the permanent bushing and removable siphon tube, which allow inspection, periodic hydrostatic testing and, when necessary, replacement of any part, without devalving. The locking pin fits into a blind hole so that there is no possibility of its getting bent and jamming, and the seal wire is placed where it is least likely to be broken, and easily observed.

New Ideal Electric Marker

ANYTHING and everything can be marked with a new electric marker just announced by the Ideal Commutator Dresser Company, 4110 Park Ave., Sycamore, Ill. Although small in size, only 6 inches long and 10 ounces in weight, life tests prove that this new

marker can be used continuously on the toughest of marking jobs, according to the manufacturer.

The IDEAL Marker operates from any AC electrical outlet. Operating like a small electric hammer, it makes 7200 cutting strokes per minute, cutting right into the surface leaving lines that cannot be wiped away or worn off with ordinary usage. Permanently marks sizes, names, numbers and other important information on tools, parts and finished products. Marks iron, steel, bronze, aluminum, ceramics, tile, marble, lead, plastics, porcelain, glass, etc.

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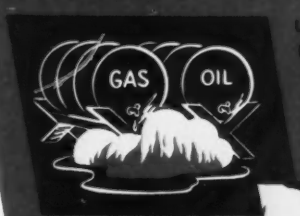
Floafome

FOAM TYPE

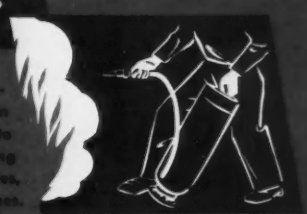
SMOTHERS FLAME WITH A BLANKET OF FOAM!

Covering flame with a fireproof cloak, Floafome provides swift, three-way action — smothering, cooling, and insulating against re-ignition. It produces approximately 22 gallons of tough, durable foam when inverted. It has an effective range of 40 feet. Constructed with exclusive Sure Sweat seam.

WHERE TO USE Floafome



Use on Class A and B fires — against gasoline, oil, grease, textile, paint, chemical, flammable liquid, paper, wood, and alcohol fires.



Direct nozzle; invert extinguisher. For fires in liquids allow foam to fall lightly on burning substance. For other fires, aim at base of flames.

HOW TO USE Floafome

NOW IN COPPER!

Available at last—this popular extinguisher is back in handsome, durable copper.

THE GENERAL DETROIT CORP.

2270 E. JEFFERSON AVE., DETROIT 7, MICH.

Distributors in principal cities

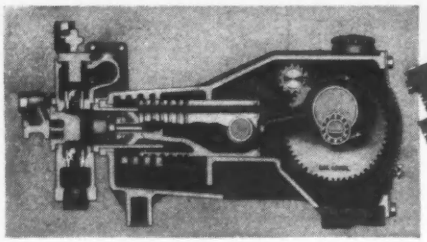
CHICAGO DALLAS NEW YORK

West Coast Affiliate: The General Pacific Corp.

Seattle • LOS ANGELES • San Francisco

Let General Protectioneers prescribe the right extinguisher for your every fire hazard.

WHY FMC HIGH-PRESSURE FOG KNOCKS DOWN FIRES—FAST



FMC HIGH-PRESSURE PUMP. A 3 cylinder, positive displacement horizontal pump with many proven endurance features. Sturdy and compact. Modern in design. Built to produce and maintain better than 800 lbs. pump pressure —600 lbs. or more nozzle pressure. Nothing else like it!

REASON No. 1

THE PUMP AND THE PRESSURE

The FMC High-Pressure Pump—built by Bean—is different from all other pumps and is designed especially for high-pressure work by high-pressure pump engineers.

It packs the needed punch to produce and maintain *800 lbs. pump pressure* — better than *600 lbs. nozzle pressure.* No need to speed it up to get the necessary pressure! It does its job easily —without overworking.

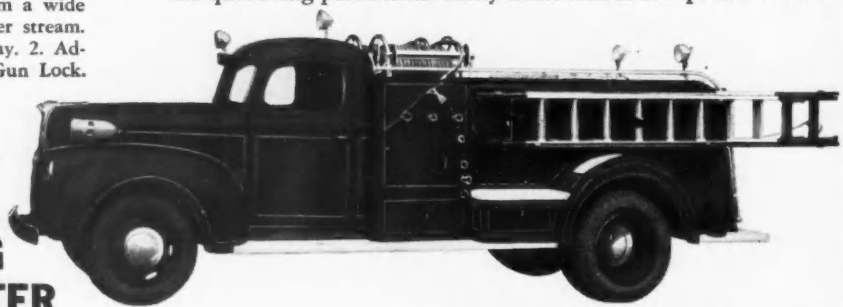
FMC FOG FIRE GUN. Provides every type of fog formation that may be needed—from a wide fog pattern to a long-reaching power stream. Note the features: 1. Protective Spray. 2. Adjusting Barrel. 3. Trigger Grip. 4. Gun Lock. 5. Hose Swivel. PATENTED.

REASON No. 2

THE FOG FIRE GUN

The FMC Fog Fire Gun — built and patented by Bean — is designed only for high-pressure fog fire fighting. It cannot be used with a low-pressure system.

The high-pressure provides a combination of high velocity and finely-atomized water, just what is needed to *blast, cool* and *smother* flame. One gallon of this water fog, properly used, has fire-quenching possibilities many times that of low-pressure water.



REASON No. 3

THE FOG FIRE FIGHTER

The FMC High-Pressure Fog Fire Fighter carries its own water supply and complete fire-fighting equipment. So — the fireman can go to work without delay, the moment he arrives at the fire.

There are two guns of 30 gals. each at 600 lbs. or more nozzle pressure. Their flow is adjustable to any needed type of fog formation—from a wide fog pattern to a straight power stream.

Investigate this revolutionary method of fire fighting. Write—Today!

FMC FOG FIRE FIGHTER. A complete self-contained fire-fighting unit. Carries a 400 gallon water supply and complete fire-fighting equipment. Provides two guns of 30 gallons each at 600 lbs. or more nozzle pressure.

FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., 726 HAZEL ST., LANSING 4, MICH. • BEAN-CUTLER DIVISION, 426 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

AKRON

MULTIVERSAL PORTABLE DELUGE NOZZLE

A complete, self-sustaining, fire-fighting necessity of maximum flexibility and capacity, occupying a minimum of space.

SELF-SUSTAINING—Once placed in position and under pressure, this nozzle remains stationary without further attention or assistance.

MAXIMUM FLEXIBILITY—Stream may be directed up or down, or in a complete circle without moving the base.

MAXIMUM CAPACITY—Handles one, two, three or four hose lines. Automatic clapper valves on intake manifold facilitate volume control.

AKRON BRASS MFG. COMPANY, INC.
WOOSTER, OHIO

OFFERED IN FOUR STYLES

Style **500** • • *with four inlets.*
Style **501** • • *with three inlets as illustrated.*
Style **500MT** • *with four inlets having handwheel control.*
Style **501MT** • *with three inlets having handwheel control.*

AKRON BRASS
FIRE FIGHTING EQUIPMENT

—AND WHAT DOES C-O-TWO DO FOR INDUSTRY

Well, the above question calls for a little explanation. The word C-O-TWO is a part of the corporate name of the C-O-TWO Fire Equipment Company and is also a registered trade mark which appears on all this company's products. In short, C-O-TWO when applied to fire protection equipment spells Modern Fire Protection. Modern, because the use of carbon dioxide, the fastest non-damaging extinguishing agent, has been harnessed and controlled so that its instant application to fire under terrific pressure is simplicity personified. For example:

The famous Squeez-Grip release valve on C-O-TWO portable units is so easy to operate that even a child can handle it effectively against fire.

Hose reel units in fixed positions afford the operator easy maneuverability with a fast unwinding, non-kinking hose and trunnion type reel.

Built-in systems designed to protect single or multiple spaces employ the famous C-O-TWO pressure operated design with pressure operated systems. The discharge of one or two control cylinders simultaneously releases carbon dioxide from the other cylinders in the bank.

C-O-TWO Smoke Detecting Systems, for protecting one or more spaces, discover fire in its incipiency. Even a tiny whiff of smoke will sound an alarm and the exact location of the fire is instantly shown in the individually numbered windows of the Smoke Detecting Cabinet.

Today, C-O-TWO equipment is used by all branches of the armed forces. Billions of dollars worth of machinery and materials are protected by C-O-TWO. Briefly, that is C-O-TWO. . . . If you have a fire protection problem, write for particulars.

C-O-TWO Kills Fire . . . Saves Lives . . . It's Safer . . . It's Faster . . . It's Modern

C-O-TWO FIRE EQUIPMENT COMPANY
NEWARK 1 NEW JERSEY
Sales and Service in the Principal Cities of the United States and Canada

Another Buffalo 1,000 G.P.M. Triple Combination for the city of Buffalo, the seventh repeat order.

BUFFALO
better-built

SAFE

LOW CENTER OF GRAVITY

1895 - 1945
GOLDEN ANNIVERSARY
50 Years of Service

BUFFALO FIRE APPLIANCE CORPORATION

M & T BUILDING BUFFALO 2 NEW YORK

BEWARE THE SECOND FIVE MINUTES

By careful, stop watch-timed tests, it has been shown that a fire which a couple of alert high school boys could put out during the first five minutes may become impossible for trained firemen to handle in the *second* five. Slow, unwieldy trucks with balky engines mean costly delay in answering a fire when a minute may mean everything.

Ward LaFrance fire apparatus is an assurance of predetermined performance . . . limber action, power, and pumping capacity . . . based on careful engineering to fit each community's particular needs. And the powerful Ward LaFrance six-cylinder engine, designed for fire apparatus and nothing else, is a marvel of reliability and unfailing quick starts. Write today for details of our complete line of triple combination pumpers and quadruples.

WARD LAFRANCE

TRUCK DIVISION

GREAT AMERICAN INDUSTRIES, INC.

ELMIRA, NEW YORK